This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

HARVARD UNIVERSITY

LIBRARY OF THE

GRADUATE SCHOOL
OF EDUCATION

3 2044 102 788 759

WAYMARKS FOR TEACHERS

WAYMARKS FOR TEACHERS

SHOWING

AIMS, PRINCIPLES, AND PLANS OF EVERYDAY TEACHING

WITH ILLUSTRATIVE LESSONS

BY

SARAH L. ARNOLD

SUPERVISOR OF PRIMARY SCHOOLS, MINNEAPOLIS, MINN.

SILVER, BURDETT & COMPANY

NEW YORK ... BOSTON ... CHICAGO

1894

Hist. Textbk. Coll
LB1555
.A7
HARVARD UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
MONROE C. GUTMAN LIBRARY

Copyright, 1894,
BY SILVER, BURDETT AND COMPANY.

Entered at Stationers' Hall, London, England.

University Press:
JOHN WILSON AND SON, CAMBRIDGE.

GREETING.

IN the ever-to-be-remembered record of the experience of Christian and Hopeful in the dominion of Giant Despair, we read of their return to the King's Highway, to the stile over which they had ventured into the enticing by-path. "Now, when they were gone over the stile, they began to contrive with themselves what they should do at that stile to prevent those that should come after from falling into the hands of Giant Despair. So they consented to erect there a pillar, and to engrave upon the side thereof this sentence: 'Over this stile is the way to Doubting Castle, which is kept by Giant Despair, who despiseth the King of the Celestial Country and seeks to destroy his holy pilgrims.' Many therefore, that followed after, read what was written, and escaped the danger." Thus the friendly waymark bestowed upon all who were able to "read what was written" the best fruit of the pilgrims' experience.

We like to think of the King's Highway as safely hedged by such guides, and marked as well by signs of paths surely leading to the Beautiful Gate. But is it not true that our way is so marked? The experience

of others in our common work is ever a waymark to guide all who are able to read what is written. The notes which follow are recorded in this hope, — that these fruits of every-day experience in every-day school-rooms may prove to some fellow-traveller helpful waymarks.

Readers of the "New England Journal of Education" will recognize in these pages articles which were first published in that journal. The courtesy of the editor in allowing the reprint is gratefully acknowledged.

S. L. A.

CONTENTS.

Chapter		Page
I.	Nature Study.	
I.	Purpose and Plan	9
II.	Lessons on Plants	30
III.	Lessons on Animals	80
IV.	Lessons on the Human Body	106
II.	Language Lessons.	
I.	Purpose and Plan	119
II.	Written Work	123
III.	Lessons from Pictures	131
IV.	Lessons on Word-forms	138
V.	Poems and Stories as Language Lessons	143
III.	Reading.	
I.	Aim	152
II.	Preparatory Lessons	160
III.	How to get Expression	162
IV.	Suggestive Hints	164
V.	Lesson in Reading	168
VI.	Primary Lessons	170

Chapter		Page
IV.	Spelling	177
V.	Geography.	
	I. Aim and Plan	187
	II. Suggestive Lesson	194
VI.	Number	204
VII.	Seat Work.	
	I. Purpose and Direction	218
	II. Suggestions for Seat Work	226
VIII.	Talks on School Subjects.	
	I. Moods and Manners	237
	II. For Monday Mornings	240
	III. The Schoolroom Atmosphere	244
	IV. The Programme	247
	V. The Lesson	255
	VI. The Discipline of the Schoolroom	262

WAYMARKS FOR TEACHERS.

I.

NATURE STUDY.

I. PURPOSE AND PLAN.

BEFORE any work is outlined in the subject it will be well to state our motive in introducing nature study into the curriculum of our schools. No teaching can be definite unless the teacher is clear-sighted in her recognition of the purpose of her work. She should appreciate the one great motive in educating the child, and should realize in what measure the daily lessons of the school-room help to achieve this end. Nothing else helps so much to strip from the teacher's methods the cumbersome crusts of custom, and to clear the way of the accumulated trash of random suggestion, leaving the path free for the steady, even march toward the one goal. Such recognition of the true end of teaching serves to sift all methods which are cried by hobby-riders or flung to the breeze by amateur experimentalists. It tests the material brought forward to heap upon our course of study, and selects such method and such matter as must without fail give to the children the utmost help in reaching this mark that is set before them. It is a magnet which draws to itself the appropriate means for instruction, and repels the worth-

less. It organizes the forces at our disposal, brings order out of chaos, simplicity out of multiplicity, harmony out of conflict. By this overruling and dominating purpose should the teacher's work be judged, and only that which urges toward the chosen object be pronounced good.

This purpose — we state it without attempt at argument — is character-building, — developing in the child all powers which make him an upright, honorable, helpful, and happy man, which will fit him to live well the life which is his, to run well the race which is set before him. No lower aim will content a people who have declared their firm and abiding belief that all men are born free and equal, with an inalienable right to life, liberty, and the pursuit of happiness. To fit the child to live a life worth living, to help himself and others to such living, to the fullest liberty, to the capacity for happiness and the means of securing it, — is not this the end of education? And is our school work in the right line if it does not do its part to help toward this end? Out of it must come greater power to think, and righteous thoughts; greater capacity for feeling, and sympathy with our brother's need; greater power of expression, because great thoughts and noble feelings demand expression; greater power to see, and to see the beautiful. We teach the child to add, subtract, multiply, and divide; and what avails it if he use his power to cheat his neighbor, and give false weight and measure? We teach him to calculate, to weigh values, to think with mathematical directness, and omit the training which would make these tools work for righteousness; and he has only become better able to scheme and plan for his own betterment and his neigh-

bor's ruin. We teach him to read, without implanting in his soul such love of the good in literature that he will choose the good and no other, and we have opened for him doors into evil paths as well as good, without power to withstand the temptations of the one and to steadily pursue the other. We give him language power to express his thoughts; what thoughts? We train him to write — what? We would make his body strong and powerful; to what end? We would make him amenable to school discipline; and why? To what end shall we train eye and thought, heart and will? To what end shall we read and study and work with the most earnest endeavor and most thorough earnestness? To this end, and none lower: that we may help the children toward this ideal which we set before them, — a strong, wholesome, well-rounded life, worth the living for self and for others.

And are we to do it all? No; no one of us is capable of so much; but we are to take hold of hands with all who are working toward the same end, and to do our part. We cannot do it well unless we keep our eye on the goal, and so tend steadily toward it.

Passing for the time the other means for development in our ordinary curriculum, let us turn at once to the nature study, and note its relation to the end which we have in view in our teaching. What has it to do with the well-being of the child? Does it properly belong in our course, judged by the standard which we have just accepted?

One of the necessities of our life is knowledge of our environment. In this world of nature we are set to live our lives, among its trees and flowers, its rocks and rills, through its storm and shine, amidst its silent, eternal

forces. Upon its life does our physical life depend; with our apprehension of its laws and appreciation of its beauty is our spiritual life concerned. If the wheat ministers to our physical need and provides us food, none the less does the beauty of the growing grain satisfy the eye, and the truth of which the seed is a type feed the soul. The law which guides the mountain torrent in its course, moves the mighty glacier in its bed, or sows the fluttering seed of the maple, guides our steps. We battle with the storm on sea and land, and its strength becomes our own, — a part of muscle, nerve, and sinew, as well as of heart. We share with grass and flowers the blessing of the sunshine, and then, looking upon our friend of glad, joyous heart, say nothing better than this, "His nature is sunny." The highest aspirations and convictions of the soul are spoken in terms of nature: "As the hart panteth after the water brooks, so panteth my soul for thee, O God." "Thou art my Rock." "Stormy wind fulfilling his word." From earliest time has man, looking upon the face of nature, learned to see his Creator and read his laws. In no other way can we so well read the laws of life and love, and come to know "the Father of Lights, in whom is no variableness, neither shadow of turning."

That the child may be reverent and upward-looking, and that he may come to know himself as subject to eternal laws, we would have him study nature. But this is not all, though it stands first among the many reasons for this training. The child's "pursuit of happiness" depends upon the power within him, the power to see and enjoy beauty. Holmes has said, "One must have the ocean in his soul if he would enjoy Nahant; he must have the mountains in his heart if he would

live in Berkshire." Why could Wordsworth say of Peter Bell, —

> "The primrose by the river's brim
> A yellow primrose was to him,
> And it was nothing more"?

Because he had not primroses in his heart; because his eyes had never been opened to see the beautiful. Think how barren this world must be to such a man, — how limited his capacity for happiness, how narrow his living, — not because his work is common or his lot in life mean, but because his eyes are holden, so that he can not see the wonderful beauty that fills his pathway. How can we withhold from the children the training which will open their eyes to see, which will make the wilderness blossom as a rose, the "mountains and hills break forth into singing"? Lessons which direct their attention to the wonders of the world about them, and lead them to love the beautiful therein displayed, must increase their avenues of happiness, and enable them even through heaviest drudgery to make music in their hearts and to see the beautiful wherever they are placed. Such open vision should come from the nature study, — clear seeing, earnest thinking, reverent feeling. If these results do come, we must place nature study upon our list of essentials. What is essential if these powers are not?

The immediate ends in view in the nature lesson are observation, knowledge, expression, and enjoyment. The child should learn to see the plant or mineral clearly and to state truthfully what he has seen. He should learn to observe in an orderly manner, so that his observation may be complete. In order to obtain this result, he must develop through these lessons the

power of continued attention. The child naturally gives his attention simply to the thing in which he is interested, and only as long as he is interested. He is like a butterfly that flies from flower to flower, hardly alighting, always changing, never at rest. He must learn to hold his thought to one definite subject and to one definite purpose until he has obtained all the knowledge that he can obtain from his study. The nature lesson affords a better opportunity for this training than other observation lessons. His observation should also be thoughtful, — the *why* should always follow the *what*. He sees that the cat has sharp, tearing teeth; why? He watches the cow chewing her cud; why does she masticate her food in this strange fashion? He sees the arrangement of the toes on the foot of the woodpecker; why is not a woodpecker's foot like an owl's? He sees the curious arrangement of pollen in the lady's-slipper; why is it so curiously placed? He sees the wonderful construction of the milkweed seed; why is it furnished with silky wings? He sees the twisting tendril of the grape-vine tightening and hardening about the trellis; why has the stem this power? All observation should lead to questioning, — serious, thoughtful questioning, that must develop a reverent spirit.

From these nature lessons the child should gain knowledge, and this knowledge should be useful and definite. We may well ask here what knowledge is useful. The common tendency is toward materialism. That knowledge is considered most useful which shows immediate result in bread-winning. Reading, writing, and arithmetic have been considered indispensable to earning dollars and cents, and therefore essential; but the true teacher has broader views. She recognizes the

value of lessons which develop power in the child, and which enable him to enjoy life and to intelligently interpret his surroundings. The element of enjoyment should be emphasized all the more when the finger of destiny seems to point a child toward a life of dull and hard routine. If the boy has to pick stones on the road or to handle hammer and drill in a quarry, all the more need of his learning to see the beautiful around him, and to read in nature such messages as will cheer and encourage him in his toil. Knowledge which increases capacity for enjoyment, which opens new and right avenues through which the child may see and find pleasure, which ministers to his highest good, which helps his soul to grow, — this knowledge is useful knowledge.

In another sense we must look for useful knowledge among the materials which will prepare the child for future study. Out of the broad field of knowledge which would be interesting and helpful to the child, we must select those subjects which will furnish foundation truths for the work which is to be done later in the school course. Before geography is studied as a science, all primary ideas involved in its study may be given the child in these observation or nature lessons. The foundation facts of botany may be observed in the primary school. Birds, animals, fishes, frogs, bees, and butterflies — companions of the child in his home life, in his play, in his walks to school, in his vacations in the woods and fields — should be teaching him the underlying truths of zoology. The beginnings of mineralogy and geology are in the pebbles with which he dams the stream, or the sand with which he plays upon the seashore. But best of all, the intelligent observation of all these manifold objects gives him knowledge,

through the getting of which he becomes able to get more and more. He grows in power to help himself, and so to help others.

This knowledge, in order to be useful, should be definite, a result of accurate observation and clear statement. No vague chatter about the pebble, the flower, or the insect will suffice. All teaching should lead the child to see and to know something which becomes definitely and clearly his own.

One of the incidental, yet important, aims in nature study is expression. The nature study furnishes abundant opportunity for development of language power. These lessons are among the best lessons in thought getting. The child is constantly arriving at new thoughts which he desires to express to others. The eagerness of his desire insures interest in the lesson. The teacher should regard this lesson as a language lesson as well as a science lesson, although the language aim is not uppermost. But the child is constantly forming habits of expression. She should see that this expression is correct in detail, that it is complete, and that it is well-arranged. These results may be secured in part through the direction of the observation. Accurate observation must be expressed by accurate and correct statement. Orderly observation involves well arranged and systematic expression. If the child sees the whole object and the parts in relation to the whole, he will be able to describe as he sees. The arrangement of paragraphs will naturally follow the grouping of ideas that come in orderly observation.

Care should be taken in these lessons to keep the most important aim in the foreground. The lesson is to teach the child to see, to think, and to feel, and then to

supply words to express what he sees and thinks and feels. It is a mistake to give a lesson for the sake of teaching certain words. Teach the words only when they are needed to express the thoughts which demand utterance. Do not bring a flower to a child for the sake of teaching him the term *calyx*, but give him the term when he has learned that he needs it to describe to you the flower which he has found and in which he has become interested. The term *vertebrate* is not needed until the child has discovered that some animals are not possessed of a backbone. When it becomes necessary for him to group these animals which he has studied, he will recognize the necessity of the term, and it will be easily fixed in his mind. The words which he needs to use to express his thought become his own. Words which are impressed upon his memory by the teacher, without his recognition of this need, will be easily forgotten. They do not become a part of his experience. Teach the technical terms as they are needed for the expression of thought, but do not make them the chief end of the lessons.

The child should gain through every nature lesson not only training in observation, new knowledge, and added power of expression, but also a greater power to see the beautiful, greater love of nature, and fuller capacity for enjoyment. Observation, knowledge, expression, enjoyment, — these should be in some measure the outcome of every nature lesson.

The method to be followed in such teaching may be simply outlined in three words, — get, see, and say. If the child is to learn to observe, he must observe something. It goes without saying that any lesson in observation must be given in the presence of the object.

The lesson upon plants involves the presence of plants; stones are indispensable to a lesson on minerals, and an animal must likewise serve as illustration for the animal lessons. Get the specimen first of all. Let it be a specimen which the children can easily obtain for themselves. Flowers grow everywhere. They are most valuable for study, because they will be seen again and again wherever the child may go. Hence it is doubly necessary that he should be able to interpret the message which they have to speak to him. They will line his life's pathway; he must learn to see them aright. They can easily be brought into a schoolroom. The supply is unlimited; the children can procure them for themselves, and can observe them at home as well as in school, because the material is so abundant and so easily obtained. Plant lessons naturally predominate in the nature study.

Many animals can easily be brought into the schoolroom. Insects in glass bottles, birds in cages, fishes and snails in the aquarium or glass jar, beetles and frogs in pan or tub. Stones are always to be had for the asking. The miracle of the snow-crystal is repeated for us every winter, and so is the marvellous tracery of the frost upon the window-pane. "The stars come nightly to the sky," the moon waxes and wanes, the sun rises and sets, winds blow, and rain falls. All the forces and facts of nature have their message for the children and for us, and easily lend themselves to our reverent questioning.

Having the specimen, the next step is to see it. We have read of those who, having eyes, see not, and having ears, hear not. Of how many of us is this a faithful description? The teacher who would lead the child to

see must herself be open-eyed. She must see in the aster all that she would lead the child to see in it, and more. Unless she has learned to observe, she can neither direct nor test the observation of her pupils.

Remember, the child is to see and to gain knowledge through his own seeing, not to be told what the teacher sees. It is much easier for us to do the work than to help the child to do it; but their profit is in their doing. Learn to direct the attention of the children to the point to be observed, and to hold it there until the child has completed his observation. The attention of the child will be dependent upon his interest in the subject. Your manner of questioning and your own interest in the subject will do much to determine his interest and attention. Question skilfully, definitely; ask questions which will lead the child to think. Not: "What about the aster?" No one can answer definitely an indefinite question. Rather, direct the attention of the children to some definite point: "Look at the root of the aster. What is its color? Think; tell me how *you* see it. Look at the stem. Break it. What do you learn by breaking it? Look at this little yellow flower; look at this purple flower; are they alike or different? In what are they different? What is the shape of the yellow flower? What is the shape of the purple flower?" If a pupil becomes inattentive, give him a question to answer, or ask him to repeat an answer already given. Distribution of the questions will help to hold the attention of the pupils. Orderly arrangement of the questions will lead to orderly observation and complete description.

Lead the children to verify statements that are made by others. John finds that his aster is purple. What

is the color of Jane's, or Kate's, or Joe's? Mary says that her stem is brittle. What does John find, and Kate, and Susie? Joe finds the ray-flower shaped like a strap. Does John, or Mary, or Kate? It is well for the children to hear the universal testimony before making their decision. So they come to know both sides of the shield.

Observation which is clear and definite, and in which the children are interested, will stimulate to outside observation. No lesson is wholly good which does not lead to continued observation out of doors and at home. In order to encourage this habit, ask the children to tell what they have seen that is like the fact observed in the lesson. Give periods for the reports of out-of-door observation. Let the children keep note-books and compare notes.

Through her emphasis of important facts the teacher can determine the knowledge which will remain with the child, — his interest, which is the chief factor in determining his memory. The children will naturally be attracted by many items which are not in themselves worth remembering. The curious streaks in the apple will mean as much to them as the number of seed-cells; yet the latter fact is one which the teacher will emphasize in reviews. It is the one which gives the clue to the group to which the plant belongs. In the lesson on the aster, the structure of the two different kinds of flowers is the fact to be reiterated. Many other common flowers belong to the family thus described. The many flowers in one head, and the shape of the different flowers, are items which determine classification. The child need not know this now; but the teacher should know it, and in her reviews hold the

attention of the children to those truths which they need to remember.

All which is true in regard to correct expression in the language lessons applies to the expression element in nature study. Thought should come first, expression afterward. The correct form should be taught by giving the child the right pattern, and then by affording abundant opportunity of practice. The systematic arrangement should come through the teacher's plan, and the child's habit of careful arrangement; ease and fluency will result from frequent repetition of familiar facts. In the reproduction of the nature lessons, the teacher can give her attention to form and expression. In observation and thought getting the form should not be allowed to interfere.

The following plan may suggest to teachers who have not yet attempted this work, the order of observation. This may be used until the teacher finds a better way for herself.

I. Observation of the plant as a whole. (Place found, — kind of soil, sun or shade, — how found, general characteristics, and use.)

II. Observation of parts.

1. Root: color, kind, quality.
2. Stem: position, shape, color, parts. (Break: woody, pithy.) Structure: joints, nodes.
3. Leaves: parts, kind, veining, margin, shape, arrangement.
4. Blossom: position, arrangement, parts, color, number and arrangement of parts.
5. Fruit: kind, number, structure, time of ripening, use, distribution.
6. Seed: studied as fruit.

The children will observe simple facts, and express them in appropriate language. If the technical term is necessary to the expression, do not hesitate to give it. Do not say "saw-toothed," when the child understands, or may understand, that "serrate" expresses that meaning.

After observing a leaf or flower, draw. The drawing leads to more definite observation. It is a mode of expressing what the child sees, and so affords the teacher a test of his observation. In this drawing, approve observation of essential facts rather than fineness of detail. If the child shows that the base of the birch-leaf is broad and the apex pointed, the margin serrate, and leaf net-veined, his drawing is good, even if it seems crude and unfinished. Aim to make the drawing a simple report of the observation — not a picture.

The comparison of different objects leads to more accurate observation. The grass-blade is seen to be narrow when placed beside a lilac-leaf. The rose-leaf is shown to be compound when compared with the simple geranium-leaf. The absence of stipules is shown only when a leaf is compared with another having stipules. After describing one animal, plant, or stone, compare it with another which is very different, that the contrast may give definiteness to the ideas gained. Compare it also with one which is like the first, in order to afford review of the ideas obtained through the first observation.

Other things being equal, select a familiar specimen for study, in order that the pupil may apply his knowledge in his every-day life. Make a careful sequence in selecting specimens. In the animal lessons, for instance, select types of the different branches of the

animal kingdom. In studying birds, lead the children to observe the types of waders, scratchers, runners, and the like. With plants, choose such as to illustrate the leading classes, — plants with parallel-veined leaves, then plants with net-veined leaves ; flowers which are five-parted, flowers which are three-parted ; plants climbing by tendrils, others which are erect without support. So arrange this sequence that every new lesson shall have been prepared for by the lessons which have gone before, and that all together may give some harmonious whole.

Let the reproduction of the observation lesson be oral first, and then written. The written work is more definite and more helpful when it has first been shaped in speech.

Add to the observation some selection from literature which will show the thought of others in the direction in which the child has been studying. If he has been studying the fall flowers, let him learn to repeat Mrs. Jackson's "September" or "October." If he has been observing the snow-flake, let him read "Snow-bound," or Emerson's beautiful "Snow Hymn," or Lowell's "First Snow-fall." If he has been describing his walk in the fields, read to him from Burrough's "Pepacton," or Thoreau's "Excursions." Help him to memorize other selections which crystallize the poet's thought. Through such reading and study he will begin to see as the poet sees, and feel as the poet feels. He will reap the benefit of the poet's clear vision, and will learn not only to observe, but to interpret nature, — to "look through nature up to nature's God."

In discussing nature study with teachers, the writer has found that the same difficulties are met in every

schoolroom, and the same questions are everywhere asked. In order to help some of the teachers who may attempt this work for the first time, a few questions are here repeated and answered.

"How long a time would you give to the description of one plant; and how many plants would you study in a term?"

A common question. The answer cannot be given in exact numbers. The purpose in giving these lessons is not to multiply knowledge of facts, but to increase the child's power of observation and his love of nature. Therefore the value of the lessons consists, not in the number of specimens observed, but in the manner in which the lessons are given. Continue the observation of any one plant just so long as the pupils are interested, and it provides opportunity for new observation and new knowledge. If the work becomes monotonous, and so wearisome, to the children, bring in a new specimen. In observing the second plant or animal, the facts learned through the observation of the first will be reviewed, and new ones will be gained in the lines in which the new specimen differs from the old. The variety in the specimens occasions new interest, and the knowledge gained is repeated, reviewed, and increased through the observation of the new object. The teacher must be her own judge of the time when the child has learned all that he can learn from the specimen in hand. It is better for the child to leave an object with incomplete knowledge of it than to become indifferent through too long observation in the same line. But the teacher should be careful to keep the relation of the specimens in her mind, and to choose every day one which will afford opportunity for review-

ing the points already learned, and which will also interest the child in new lines.

"When should the technical terms be introduced?"

Just so soon as they are needed for definite and complete expression. The lesson should never be given for the sake of the term. Flowers should not be brought into the schoolroom for the purpose of teaching the child the term calyx, or corolla, stamen, or pistil. Rather, the child should come to the term when he finds it necessary in order to express his thought of the flowers. In all the lessons in science, as in language, the thought should determine and lead to the expression. Do not hesitate to give the children the true terms when it appears that their language will be made clearer by the use of the true term. They will remember the new word because it expresses the new idea, and it is naturally added to their vocabulary because of this very need of expression. The child, like his elders, prefers to call objects by their right names, and no term will present any difficulty to him after he has mastered the idea which it expresses.

"How much written work would you require?" is another frequent question.

At first, very little. There is a tendency to exaggerate the value of the written record of the observation, so that the writing, rather than the seeing, becomes the end in view in the work. The object of the writing is to make a permanent and definite record of the observation. The value of the writing lies in its affording both permanence and definiteness of expression. In the lower grades, ask the children to write in answer to questions, or from simple topics. Later they may write a description from their individual object, without the

teacher's help. This written description should be accurate, and orderly in arrangement, It should be illustrated as far as possible; the diagram or picture of the object studied is a more faithful representation of the picture which he holds in his mind than is afforded by the words of his description. Encourage the pupils to draw everything that they see, boldly, simply, for the sake of showing the pictures which their minds hold. This drawing is invaluable, not only because it fixes the results of the observation, but also because it affords the teacher a picture of the child's knowledge. In drawing, ask for accuracy and truth, and emphasize the important facts. Do not aim at picture-making, but at a truthful representation of form, size, and structure.

"What plants can I use, or what animals or minerals? How shall I know what is best?"

Three considerations must determine our choice of specimens. First, they should be familiar, rather than strange. If the child is observing a familiar plant or animal, he has already a fund of information which he can give to the teacher and to his mates. This giving begets confidence, and an interest in the subject, and places him in an attitude for receiving. Further, if the objects are familiar, and are frequently met in his daily walks, the child will have abundant opportunity to remember and apply the new knowledge which he has gained. He will become more thoughtful and observant as he moves in his beaten path. Second, the specimens should be those which can be easily obtained in abundance and kept in the schoolroom. Flowers furnish ample material; minerals can be found everywhere; animal life abounds in every village and city. The specimens which can be easily brought and kept in the

schoolroom are those which should be selected for the schoolroom study; and the results of the child's observation of these specimens should lead him to like observation out of doors, where he can meet the objects not easily brought into the schoolroom. And third, the specimens, besides being familiar and easily handled in the schoolroom, should be those whose study will afford useful knowledge. The field from which we may select is wide. We might easily travel in it a lifetime without seeming to exhaust its material in any degree. It is necessary to outline a clearly defined path, and to decide what subjects can most profitably be studied. If the science is to be pursued in the higher grades, such knowledge should be obtained through the child's first observation as will lay the foundation for his future study. In the observation of animals, for instance, the types should be studied, so that he may become familiar with the individuals of the classes before he comes later to the study of the characteristics of the classes. The minerals which are most common in the rocks about him should be carefully observed, and the types of the great orders of plant life. No teacher can cover the entire field; but she can see that her selection affords opportunity for learning the essentials in each of the paths that she follows.

It is well to keep a record of the specimens observed. In some of the happiest schoolrooms we have seen such a record upon the blackboard. Sometimes it appeared in the form of a border, in the units of which were drawn the objects observed. The procession would change from the milkweed, aster, and golden-rod, the apple and nut, to the snowflake and the icicle. Each showed some phase of the life of the season studied.

The children should also keep their individual records. The pocket note-book is invaluable; in this the child should record his observations, not only of the specimens which he studies in the schoolroom, but also of those to which he is attracted outside. The observation of the schoolroom is worth little unless it results in the habit of seeing outside the schoolroom. Encourage the children to bring in items of interest which they have recorded. Compare notes, and lead them to see which facts are best worth knowing and remembering. If one day in the week is given to the reading and discussion of the matter recorded in these note-books, much will be done to encourage in the pupils a continued habit of observation.

"Would you never tell the children anything? Must they find out everything for themselves?"

Tell them when the time is ripe, — when the children are interested and eager to know, and when they have learned all that their eyes can tell them. Give them the further knowledge which they could only get through reading. These lessons ought to lead to larger and more intelligent reading, as well as to more careful observation; and if the teacher judiciously adds the coveted plums of knowledge when the children have been reaching for them, and then points them to the sources whence they can obtain more knowledge, her telling will be as helpful as their seeing.

"Would you use wild-flowers alone in the plant lessons?"

No. In order to prepare the children for the observation of the plant life in the spring, they should study house-plants in the winter, so that they may know how to look at their wild kindred. Have garden plants in

the schoolroom, and teach the children how to care for them. Plant seeds, and watch their development. Bring in buds and twigs in winter, and watch their development in the water and sunshine. Through this observation the child will be prepared for the revelation of leaves and flowers that comes so abundantly in the outside world in the springtime.

"How can I prepare myself for these lessons?"

This question is the most serious one that is asked. The greatest obstacle to the way to science teaching is lack of preparation on the part of the teacher. But we cannot wait until every teacher has been trained through scientific study; we must make a beginning now. If the teacher has no knowledge of flower, or stone, or animal, let her choose a subject which seems most interesting to her, and learn through her own observation. Let her take some flower, and write all that she can see about it; then take some good book and verify what she has seen; then let her lead her children to see what she has seen. Her seeing will add interest to her teaching, and open avenues for her reading. Her desire to see and know will inspire that desire in the children; and simple and small as her first results may be, they may nevertheless be true and wholesome, and may lead to greater power and fuller knowledge. If she can study under the guidance of some one who has been well trained, so much the better; but if this help is wanting, she need not fear to make a beginning. The more clearly she sees, the better her children will observe; the fuller her appreciation of nature, the greater the inspiration which she will give to her class; the more faithful and loyal her efforts, the more certain her success.

"What books shall I use?"

This is a question which can, fortunately, be answered definitely. A list of books which may be found helpful is given in the final chapter. There is, however, a certain class of books which are most desirable for the teacher, although they do not offer help in methods of teaching. For uplift, for inspiration, she should go to the lovers of nature; she should read Burroughs, and Thoreau, and Mitford. She should study Wordsworth and Whittier, that she may learn to see nature through the poet's eyes, and to love the subject that she teaches. The direct influence of this reading upon her thought and feeling will react upon her teaching, making it far more helpful than any study of outlines could be. If she finds, "sermons in stones, tongues in trees, books in the running brooks, and good in everything," she will also find for herself a way to share her pleasures with her pupils.

II. LESSONS ON PLANTS.

(For Primary and Ungraded Schools.)

1. Terms Needed in Descriptions.

Leaf: —

Blade: The flattened part of the leaf.

Petiole: The stem of the leaf.

Stipules: Leaf-like parts at the base of the petiole.

Net-veined leaves; *Parallel-veined* leaves.

Edges or *Margins* of leaves: entire, or even; serrate, or saw-toothed; crenate, or scalloped; dentate, with sharp teeth pointing outward; and wavy.

Shapes of leaves: Find the *base,* or lower end, near

the petiole; the apex, opposite the base. Leaves are oval, heart-shaped, arrow-shaped, lance-shaped. Leaves which are deeply cut, like the oak, are said to be *lobed.*

Simple leaves have but one blade; *compound* leaves have three or more blades.

STEMS and BUDS: —

Node: Joint of the stem, where a leaf is sent forth.

Internode: Part of the stem between two nodes.

Axil: Angle between the upper part of the leaf stem and the branch.

Axillary buds: Buds in the axil of the leaf.

Terminal buds: Buds at the end of stem. Buds and leaves are *alternate, opposite,* or *whorled* (in a circle).

Scales: Leaf-like parts covering the buds.

Underground stems: Tuber, like the potato; bulb, like the onion or lily.

FLOWER: —

Peduncle, or flower stem.

Receptacle: Top of the peduncle, from which the flower grows.

Calyx: Outer circle of green flower-leaves (sometimes colored).

Corolla: Inner circle of colored flower-leaves.

Perianth: Name given to the two circles when of same color.

Stamens: Thread-like parts inside the corolla.

Pistil: The central part of the flower.

Sepals: Parts of calyx.

Petals: Parts of corolla.

Filament: The stem of stamen.

Anther: The head of stamen.

Pollen: Dust in anther.

Ovary: Base of pistil, holding seeds.

Style: Stem of pistil.

Stigma: Head of pistil.
Carpel: One cell of ovary.
Fruit: The ripened ovary with its adhesions.

Teach these terms only when they are needed to make the description more simple or more definite. When once learned they should be repeated, and the child should find illustrations.

2. Suggestive Lessons and Specimens of Work of Children.

Description of the common house geranium.

This plant grew in the window-box in our schoolroom. We have kept it in the sunshine, and have watered it every day. It has made our windows beautiful. We did not pull it up to look at its roots; that would have killed it. But we have seen the roots of other geraniums. They were like hundreds of little brown threads. Ours must be like the others.

The stems are round, stiff, and woody near the ground. The young stems seem covered with velvet.

The leaves are sometimes alternate and sometimes opposite. They are kidney-shaped, with palmate veining and crenate margin, and are marked with a brown stripe near the edge. All the leaves are thick and velvety. The petioles are round, velvety, and from two to six inches long. At the base of the petioles are small green scales or bracts. These are fastened to the branch, and seem to wither and fall off; for some leaves have brown scales, and some have only scars to tell that the scales have been there.

The flowers grow in clusters at the end of a long stem. I counted fifteen blossoms in one cluster. The flower stems are of the same length. There are five green, lance-shaped sepals in the calyx; and five red, rounded petals in the corolla.

There are ten stamens with long, slender filaments grown together. The pistil becomes a long green tube as it ripens. I have not seen the seed.

STUDY OF THE SWEET-PEA.

Observe the seed in the spring. Soak seeds in water, and lead children to discover the seed-coat, the cotyledons, the radicle, the plumule. Plant them in clean sand or in a moist sponge, and watch their development. Question the children as to the changes that take place. Require them to keep little note-books in which they can draw the pea in the different stages, and record their observations. Lead them to observe and answer the following questions: What parts of the seed do you find? How does each change in soaking? What part grows first? In what direction? What next? What change takes place in the cotyledons? What becomes of the seed-coat? How are the young leaves folded? How are they arranged on the stem?

For home observation, learn how peas are planted; how long before the leaves appear; how the stems are supported; how high the plant grows; when it first blossoms; how it is cared for.

In September, study the entire plant. Where does it grow? For what purpose planted? What is the character of the root? What does the root do for the plant? How can you show it? What is the character of the stem? Is it strong or weak? What is its position? Why does it not stand erect like the corn? How is it supported? How are the leaves arranged on the stem? Observe each leaf. How many parts to each leaf? (Teach compound leaf.) Where are the tendrils? How

do they support the plant? Observe leaflike parts at base of petiole. How are they placed? Draw them. (Teach stipules.) Where are the blossoms? How many on each stem? Do you find calyx? Corolla? Stamens? Pistil? Color of calyx? Number of sepals? Are they united or separate? Equal or unequal? What is the color of the corolla? Are the petals equal or unequal? Draw them. (Teach standard, the largest; wings, on each side; keel, the two inner petals.) Are they united, or separate?

How many stamens? Growing from what? How grouped? Where do you find the pistil? What is its shape? Draw it. What does the pistil become in fruit? What part of the flower remains in the fruit?

What are the parts of the pea-pod? How does it open? How many peas does it contain? To what are they attached? Describe the ripe fruit.

Write a full description from the record made above. Draw the parts described. Compare with the bean, lupine, or clover. Write the comparison. Read and reproduce Andersen's story of the Pea Blossom. (Lesson for Grades 3 to 6.)

STUDY OF THE APPLE.

I. Observe apple-trees. Note height, position of trunk, color and other characteristics of bark, place and position of branches. Compare the apple and fir trees. Learn at home about grafting. Where are apples cultivated?

II. Plant and study seed.

III. In early spring place twigs in water and watch the development of the buds. What is the shape of the

buds? The covering? How are they arranged on the twig? Are leaf-buds and blossom-buds separate? How can you tell? Do you find scars on the twig? Where? What do they tell?

IV. Study a twig bearing blossoms. Which came first, leaves or blossoms? When? What was the size and condition of the leaves when the blossoms opened? Arrangement, shape, and parts of leaves? Do you find stipules? What becomes of them? Compare the upper and under surface of the leaves. Draw, showing veining and margin. How are the blossoms arranged? Compare the stems in length. Shape of calyx. How many sepals? United or free? Shape? Where are the petals set? How many? Free or united? Shape? Color? To what are the stamens attached? How many? Do you find one or more pistils? How many? Look for unripe fruit. What part of the flower becomes fruit? What part falls off (deciduous)?

V. Study the apple in season. First, as a whole: shape, size, color, use. Second, the parts: skin, flesh, seed-cells, and seeds. Cut it open and draw the sections. Note that the skin is thin, smooth, glossy, closely adherent. The flesh juicy, composed of small cells. The seed-cells five, horny. The seeds brown, oval, pointed at the upper end, many.

VI. Read and recite Bryant's "Planting of the Apple-Tree." Read to the class Thoreau's "Wild Apples." Apples are well described in Holland's "Bitter Sweet." Tell Andersen's story of "The Conceited Apple-Branch." Draw parts studied. Compare the apple-blossom with cherry, pear, and rose. Compare the fruits of the same.

STUDY OF THISTLES.

(For Primary Grades.)

FOUND: In dry fields early in September.

HEIGHT: About three feet. A tough, stout, prickly weed, with large, fragrant, purple blossoms.

ROOT: Stem-like, round, brown, tough, with small rootlets (tap-root).

STEM: Stiff, upright, round, grooved, hollow, green.

LEAVES: Long, narrow, cut in sharp points, tipped with spines. (Why?)

BUD: Cone-shaped, covered with green, pointed scales, tipped with spines.

BLOSSOMS: On the end of stalk, purple. One head with very many little blossoms having long, slender, white tubes.

SEED: After the blossom fades, each seed flies away, helped by the thistle-down, — light, silky hairs fastened to end of the seed.

READING-LESSON TO ACCOMPANY DESCRIPTION.

Little Thistle grew in the brown field all alone by herself. She thought she was all alone, for no other thistle was near her; but Sweet-fern grew near with his fragrant leaves, the golden Aster smiled in the sunlight, and everywhere the soft gray moss made a carpet where the flowers might play.

"I wish I might fly away like that swallow," said little Thistle. "I must stay here alone in this brown field, because this tough root holds me so firmly in the ground. Nobody loves me, with these sharp ugly leaves that would drive anybody away. What can I do?" The swallow flew near, and heard her sigh. "Just grow your very best where you are, little Thistle, and some day you may have your wish," he said.

So little Thistle stopped sighing, and tried to be as sweet as she could be. She lifted her purple head into the sunshine, and became so fragrant that the bees came in little companies to share her sweetness. "We love you, Thistle," they said. When the hot days came, and the other flowers nearly fainted, Thistle's long root found water to drink low in the ground, so she was still brave and bright.

She became afraid one day when a cow came across the field where she grew, eating flowers and leaves and grasses as she passed. "How sweet that thistle is," said the cow; "but I must not touch those thorny leaves;" so the thistle was saved.

One day I looked across the fields and saw little, white-winged seeds flying through the air. I thought they were fairy birds, for their wings were soft and shiny; but when they came near I saw that Thistle was having her wish, — she was flying away.

LESSON ON CORN.

Grows where? What kind of soil does it need? How is the soil prepared? When planted? How is the seed prepared? How planted? (Plant corn and watch growth. Soak seeds. Lay over cotton on glass of water.)

Study seed: Observe seed-covering, albumen, caulicle, plumule, cotyledon.

Study plant: General appearance, height, grace.

Roots: Many, tough, like cords, spreading from bottom of stem, short.

Stem: Tall, erect, jointed, smooth, flattened on side next the ear. Within, white pith, in which we find many white, woody (longitudinal) fibres.

Leaves: Growing from joints, wrapped about the

stem from one joint to another, then spreading, long, narrow, sharp, pointed, with parallel veins and entire edge.

Blossom: The plant has two kinds of blossoms. At the end of the plant stem is a spreading tassel made of many small blossoms. In these blossoms we find the anthers. The dust or pollen falls when we shake the tassel.

Growing from the joints of the stem are the ears of corn. We know there must have been flowers with pistils where the seeds are found. The blossoms were once hidden away in the wrappings that now cover the seed.

Describe the fruit: What is the silk? Its use? Why are some ears of corn red and white? Commit to memory Whittier's "Corn Song." Read the story of Mondamin in "Hiawatha." Why is corn called Indian corn? Draw the seed in different stages of germination. Draw a section of the stem. Draw a leaf. What plant do you know that is like the corn plant? Compare the corn plant and the pumpkin vine.

LESSON ON THE DANDELION.

The dandelion grows everywhere, — in the fields, on the lawn, and by the roadside. This dandelion blossomed in early April. I have seen many in November.

The root is a long, thick tap-root, with a milky juice.

The leaves seem to grow from the root, and lie flat on the ground like a rosette. They have ragged edges. The sharp points gave the flower its name, — Lion's tooth.

The flower stem is hollow, with a bitter, milky juice.

Children make dandelion curls from the stem. The yellow blossom is set in a green cup or involucre. This involucre is made of a double row of narrow green scales. The many bright yellow flowers grow from a flat disk. When the flower goes to seed it forms a feathery ball. Every seed has a tiny tuft of silky hairs, with which it rides away upon the wind.

What use is made of dandelions? How many years do they live? How are they sown? Are all dandelions alike? Compare leaves of different dandelions. Draw the disk, the leaf. Can you find stamens in the little blossoms? Pistils? Memorize part of Lowell's poem, "To a Dandelion."

DESCRIPTION OF AN ASTER.

(By Primary Children.)

We find the aster growing by the roadside and in the woods and fields. It has many purple or white starlike blossoms. The word "aster" means *star*. The root is brown and fibrous. The stem is round, stiff, woody, and easily broken. The leaves are alternate, net-veined, sessile, narrow, pointed. The flowers are many and in large sprays. Every blossom is really a family of tiny flowers, called a head. The asters have two kinds of flowers in each head, — ray flowers, and disk flowers. The ray flowers are on the outside, and are purple. The disk flowers are on the inside, and are yellow. The ray flowers are strap-shaped; the disk flowers are tube-shaped. The cup of green scales which holds the blossom is the involucre.

The children who observed the aster and wrote this description, committed to memory these lines of Helen Jackson's: —

"The lands are lit
With all the autumn blaze of golden-rod,
And everywhere the purple asters nod,
And bend, and wave, and flit;"

and also the couplet, —

"Asters by the brook-side
Make asters in the brook."

They learned to recite "October's bright blue weather," and Longfellow's —

"Spake full well, in language quaint and olden,
One who dwelleth by the castled Rhine,
When he called the flowers so blue and golden,
Stars which in earth's firmament do shine."

OCTOBER LESSONS.

(For Young Teachers.)

Our thoughts are with the young teachers who are making so many new beginnings; and our purpose in grouping these few lessons is to help them to undertake work which to many seems vague, because difficult, and yet to which they may bring much native wit, in spite of their trepidation and seeming lack of preparation. The lessons, for want of a better name, may be termed observation lessons. Their object should be to interest the children in their every-day surroundings, to lead them to observe more thoroughly, and through the study of the fruits, to associate with the harvest the truth which the ingathering typifies. The lessons will be very simple, and far from exhaustive. They may serve as a beginning, to stimulate both teacher and pupil to more scientific work later. At least, they will make the children and their growing leader more conscious of the beauty about them, and help in some measure to open their eyes and ears to the message which wayside flower and forest leaf may bring, or the truth which is wrapped in the unnoticed seed or the

accustomed harvest. The lessons being prepared for October, the material should be what that month affords. The few remaining fall flowers may serve for the first week; the changing leaves will supply material for the second; the common fruits and vegetables for the third; while the fourth may be given to the study of memory gems and the harvest lessons.

Among the flowers, we shall find the golden-rod, aster, gentian, sunflower, and late clover. Begin with the golden-rod, which so many school-children would choose for the national flower. Bring an entire plant to your class Monday morning, and try to secure as perfect a specimen as possible.

Ask your pupils to tell you where they have found the golden-rod. After several have told their experiences, the class will be ready to tell you that it grows "everywhere," as far as they know. It blossoms when? Some will remember having seen the blossom in July; and now it is October, and the fields are still bright with the sturdy flowers. Notice the long, stiff, brittle stem, the arrangement of the narrow leaves, which they may represent by a drawing. Call attention to the shape of the plumed blossoms, which leads us to speak of a "spray of golden-rod." Then lead the children to see that each spray is made up of numberless little yellow heads set in green cups. By and by they may be told the names of these parts, and discover for themselves the tiny flowers of which the heads are composed. But these lessons do not purpose to teach the technical terms. The children will want them later; and when they need them, they can be easily fixed in the memory.

Attention has been called to the height of stem, the

shape of the leaf and spray, and the general structure of the blossom. Ask the boys and girls to look for other specimens of golden-rod, and see if all are alike. They will find a short-stemmed, narrow-plumed golden-rod in the school-yard, perhaps. In the swamp, near the old stone wall which borders it, is a tall, graceful specimen, with slender, spreading plumes. Some will find the sweet golden-rod; others, the showy, club-shaped blossoms; and others still, the brilliant specimens that grow near the sea. Some will be in seed already; these will deserve close attention. Collect specimens of the different varieties, not to lie around in heaps on the desks, but to be arranged neatly in separate jars. They will doubtless stir you to seeking their names and learning more of their kindred. If the children have observed closely enough to tell in writing the marks which characterize the golden-rod, so that they are able to recognize it, and have come to recognize the variety in the groups that grow near their homes, we may be sure that they have gained in interest, and that their eyes are brighter than before the lesson.

The next lesson may introduce the asters, purple and white. The meaning of the name creates interest among the pupils. These star-flowers grow — where? They are not so well known as the golden-rod, and will need closer observation. But already the class observe with greater enthusiasm. Let them compare the white and purple asters, then the asters and golden-rod. Tell them, if you choose, that each purple ray is a flower in itself, and bid them look for the tiny yellow flowers in the disk. Then set them hunting for different asters in woods and fields. Read to the class Bryant's "Death

of the Flowers," and lead them to see that he too cared to watch —

> "Upon the hill the golden-rod,
> The aster in the wood,
> The yellow sunflower by the brook."

The following lesson may have the sunflower for its subject. Bring a specimen in which the seeds have ripened, as well as a fresher one. If possible, have the entire plant. The large, rough, long-stemmed leaves may be described and drawn. The tough woody stalk should be observed. The large, overlapping scales of the cup, the yellow ray-flowers, the smaller disk flowers, have probably been unnoticed before, though the sunflower is an old neighbor. See how the seeds are packed in their little sockets. What must have been in the disk before the seeds came? What differences between the sunflower and the aster? Are they alike in anything?

For the next day, can you not find the gentian, that beloved autumn blossom, that comes

> "— alone
> When woods are bare and birds have flown,
> And frosts and shortening days portend
> The aged year is near his end"?

Perhaps you will find the closed gentian, with its clusters of vivid blossoms. Perhaps the delicate fringed gentian will reward your search. Notice the bright color, the delicate fringes, the thick clusters of the closed blossoms, or the slender-stemmed cups of the daintier flower. See how the leaves are set. Think of all the fall flowers you know. Are any others like this? Read parts of Bryant's "Fringed Gentian" to the class.

Another lesson may be given to the late clover, white

or red. Draw the beautiful form of the leaf, and speak of the trefoil (three-leaf), its other name. Separate the head into the individual flowers, and see how many and how similar. Let the pupils observe these without question, and see what they have to tell. What new thing does the leaf tell? Look at the stems where they join the stalk. Is any larger flower like the tiny clover-flower?

In the afternoon of some Friday let each pupil choose and bring a flower which has been studied, and write all that he can see in it. Judge then whether the lessons have been fruitful. Think about the leaves, which shall furnish materials for the next week's lessons.

There is ample material for many lessons in October's leaves, with their gold and crimson, their olives and browns. Beauty of color is added to beauty of form, and the children will delight in both. We will not forget the simple purpose of our lessons, — to win the children to greater enjoyment in the beauty about them, and to make them desirous of new knowledge of their every-day surroundings. So these lessons will not attempt to lead to classification or technical terms, but will aim to inspire an interest which will prepare the way for a more careful study by and by.

Monday's lesson should have been made ready in good season. No teacher can afford to take up any lesson without careful preparation. For the experienced teacher the details need not be so carefully planned; her experience has been in itself a preparation. But that will not render illustration unnecessary, and illustration involves preparation. Do not hope to awaken interest and lead the pupils to good work

unless you are willing to do faithful, earnest work in preparing your own lessons.

The talks about the October flowers have opened the eyes of teacher as well as children. The trees have new messages for her, She comes to Monday's lesson with her hands filled with leaves, and a ready enthusiasm speaking in eye and voice. The children have remembered Friday's request, it is to be hoped, and have their hands full, too. The specimens which they find for themselves will have a double interest. Here are oak, maple, and ash, birch, poplar, and beech, pine, cedar, and hemlock. The elm and the locust are represented, the horse-chestnut and the linden, the hickory and the chestnut.

Begin with what the children know, — a rule that may be safely applied in all your teaching. Let them name for you the different leaves which they have brought. Place the familiar ones by themselves, those which are unfamiliar being laid in another group. If you find, as you doubtless will, that some of the pupils know much more than the rest, lead them to tell how they distinguish one leaf from another. In their endeavor to lead their neighbors to see the characteristics of the leaves, they will observe more closely themselves, and see more clearly because they must state definitely.

"The elm leaf has one point, and the maple has five," they say. "The veins on the maple leaf seem to start from the end of the stem, and in the elm leaf there is one large vein in the middle, with smaller ones branching from it." Now we come to the need of words which we have not used before. "The point" of the elm leaf is the apex; the large vein is the mid-vein;

such veining is called "feather veining." Find the apex of the birch leaf, of the chestnut, of the oak. The edges of the maple and oak leaves are cut in, to make several large "points." These are lobes. How many lobes has your maple leaf? Your oak leaf? Have you any other lobed leaf?

The time of the lesson has been used, and the children have learned this, — that there are many leaves which they do not know, growing near home, and that they need to know the right names in order to describe them to one another. Some of these terms they have learned in this lesson.

If the lesson has caused both teacher and children to realize that there is a new story for them to read in the leaves, and that they must find the words which fit the story, there will be no lack of interest in Tuesday's study. It is very probable that the teacher herself needs to study carefully the leaves which she brings to this exercise. There is a little book prepared by Miss Youmans, and called "The First Book of Botany," which will answer questions about shapes and names. It is a help in studying the leaf forms.

Bring to the class for Tuesday the maple and elm leaf, and have the children draw both. As they draw, teach them to name petiole, blade, apex, base, veins, and margin. Then compare the two. Which has the longer petiole? Which is lobed? Which is feather-veined? How do the margins differ? Which has a notched margin? That is called saw-toothed, or serrate. Which has a plain margin, without teeth? That is called entire. How many lobes has the maple? See if you can draw it without looking at the leaf. Notice the base of the elm leaf. Look closely at the leaf, so that you can draw it from memory.

Wednesday take the oak and birch. The pupils will work more rapidly, because the comparison involves review of Tuesday's lesson. Thursday, the horse-chestnut and the poplar. What other compound leaves do you know? What curious fact do you observe as you study the petiole of the poplar leaf?

Friday study the corn, the grass, and the pumpkin leaf. Place the broad leaf beside the narrow one, and the children will exclaim at the marked difference. What new veining do we find? Find and name the parts of the pumpkin leaf. What strange characteristic of the stem? Of the surface of the blade?

In the afternoon of Friday review the week's work. Let every pupil draw and describe some leaf, observing its parts in turn, and telling how it can be distinguished from other leaves. Encourage the children to make collections of pressed leaves, and to count the number of kinds which they can find. And bid them watch the glowing October colors, and learn the dress worn by the ripening leaves. What trees are gold, what red, what brown? From what trees are the leaves soonest stripped? What leaves cling after they are withered? What can you find upon the twigs from which the leaves have fallen? What story has the witch-hazel to tell? The birch? The alder? What trees have their fruits? — but that belongs to next week's lesson.

Does not the first lesson lead to many more? The children will share your interest, and the October lessons will foretell April lessons of a larger growth.

October's fruits are so many and so varied that the "general lessons" of the entire month might well be given to them. Remembering our purpose, — to de-

velop in the minds of the children a wider interest in nature, and to lead them to feel that she has many lessons for them to learn, — we will suggest work that will induce these results, rather than those that would tend to closer observation and more definite knowledge of individual objects. From the following, select for the third week's exercises those for which you can best obtain specimens and illustrations. Begin always with that which is already familiar to the children, and emphasize the new thoughts as they are developed. In every lesson recapitulate for the sake of impressing the essential points made in the exercise, and leaving the non-essentials in the background. Do not spend time in having the pupils relate that some apples are green, some are red, and some are yellow. The character of the seed-cells, their number, and the juicy pulp which surrounds them, deserve more attention. These are essential points of difference between the apple and other fruits, — as the pumpkin, for example.

I. Name ten fruits cultivated at home.

Name ten fruits which can be obtained in the markets.

Name ten fruits which are used for food. Ten which are not used for food.

What is the fruit of the oak? The chestnut? The ash? The box-elder?

What is the fruit of the beet? The turnip? The cabbage? The potato? The tomato? The corn?

What is fruit?

Where are the seeds of the pumpkin? In what are they enclosed? Name other fruits like the pumpkin.

In what are the seeds of the apple enclosed? Name other fruits like the apple.

What fruit most resembles the peach? How does the peach differ from the apple.

What is the fruit of the hickory tree? How does it differ from the apple?

Name all the juicy or fleshy fruits you remember.

Name all the dry fruits.

II. Bring to the class green and ripe tomatoes. Observe the fruit as a whole, and the structure and arrangement of parts.

Where does it grow? Characteristics of the plant. When does it ripen?

Use, — how prepared for use?

Parts, — skin, pulp, seeds.

Skin, — color, thick or thin, rough or smooth.

Pulp, — juicy or dry? How composed? How shaped?

Seeds, — how many? How attached? How shaped?

Draw as a whole and in sections.

Observe the part of the stem to which the fruit is attached. What do you find? Do you know any other fruit like the tomato?

III. Study the cucumber, squash, or pumpkin, as you have studied the tomato, and compare the three. Write the differences between them; the resemblances. How do they differ from the tomato?

IV. Collect specimens of dry fruits found on the way to school.

What specimens have you found that you cannot name, among all which have been collected?

What fruits open to allow the seeds to fall out?. Do they open in the same or different ways? What kinds of opening do you find?

Study the bean and pea in the pod. Compare with the morning-glory, the poppy, or the nasturtium.

Find the touch-me-not, and show the children how the fruit opens.

What fruits do you find without any provision for opening?

V. How are seeds planted? When?

Let some boy describe the proper method of planting corn, beans, tomatoes. How is wheat sown? Rye? Oats?

How are the seeds of wild flowers planted? The dandelion? The thistle? The aster?

Who helps to plant the acorn and chestnuts? The cherries and berries? How are the seeds of the touch-me-not scattered? The witch-hazel?

Show how the beggar-ticks which stick to our clothing are carried; the "stick-me-tights;" the burdocks. What other seeds are planted in the same way?

How are the seeds of the ash and maple carried? The seeds of the pine? Of the cottonwood?

In what ways have you seen seeds distributed?

Name seeds that are distributed by the wind; by birds; by squirrels; by means of the wool or hair of animals.

Select some seed to draw and describe.

The study of the fruit leads naturally to the thought of the harvest, the ingathering of the fruits, and the truths of which they are the type. Let the last week of the October lessons be given to these. From among the many familiar harvest hymns select one which the children can best understand, and teach it carefully. Lead them to consider the thought in the song, that they may sing with the heart as well as the voice. To that end it will be necessary to study the verses thought-

fully before they are committed to memory. Some of us remember singing the joyous refrain, —

"Come cheerful companions, unite in our song;"

and adding, —

"Sing for the deacons whenever you sing," —

the childish and innocent paraphrase of —

"Sympathy deepens whenever you sing."

Evidently the thought in the song had been a minor consideration with the instructors of our youth. However we may smile at our childish misinterpretation, we should try to prevent our pupils from making the same mistakes. The reverent spirit which will come through thoughtful study of their meaning should pervade the singing of the harvest hymns.

Beyond the learning of the hymn, take time to study some poem which is appropriate to the season, and encourage the children to bring to you selections which they have read and liked. Here is one from Whittier, modified by its separation from the poem to which it belongs: —

"This is the pleasant harvest time,
When cellar bins are closely stowed,
And garrets bend beneath their load,
And the old swallow-haunted barns,
Brown-gabled, long, and full of seams,
Through which the moted sunlight streams,
Are filled with summer's ripened stores,
Its odorous grass and barley sheaves,
From the low scaffolds to the eaves."

Question the children until the picture is real to them, and they are sharers in the joy it speaks. With

what are the cellar bins stored? Beneath what load do the garrets bend? Who has seen a swallow-haunted barn? Who can tell more of them? What is the "moted sunlight"? Can you shut your eyes and see its beams lighting up the dusty old hay-loft? What are "summer's ripened stores"? Who knows the "odorous grass"? What do the full barns and overflowing bins tell us? Think of the people who are everywhere rejoicing in the year's harvest. Why? What came before the harvest? Speak of the care of the ground, the sowing of the seed, the toil that was necessary before the harvest could be gathered in. And you will not forget "the early and the latter rain," or the summer sunshine, without which the harvest would have failed. Do not preach; that will avail little. But if your spirit is earnest and sincere, the veriest child in your room will unconsciously come to lift a grateful heart to the Lord of the harvest, and to recognize in some measure the beautiful truth that we are workers together with Him.

If your pupils learn readily, and your heart is in your work, there will be time to memorize other "gems" before the week is past. Parts of Whittier's "Corn Song" may be committed to memory, after they have been studied. How joyous it is, and full of "the unsung beauty hid in life's common things below."

There is joy and gladness, song and sunshine, in Helen Hunt Jackson's "October's Bright Blue Weather." 'T is a beautiful thing to associate with the familiar sights and sounds which have been dullest prose to country boys and girls. You have done much for them if you have been able to link with their every-day commonplace, this thought of beauty: —

"O suns and skies and clouds of June,
And flowers of June together,
Ye cannot rival for one hour
October's bright blue weather.

"When loud the bumble-bee makes haste,
Belated, thriftless, vagrant,
And golden-rod is dying fast,
And lanes with grapes are fragrant;

"When gentians roll their fringes tight
To save them for the morning,
And chestnuts fall from satin burs
Without a sound of warning;

"When on the ground red apples lie
In piles like jewels shining,
And redder still on old stone-walls
Are leaves of woodbine twining;

"When all the lovely wayside things
Their white-winged seeds are sowing,
And in the fields, still green and fair,
Late aftermaths are growing;

"When springs run low, and on the brooks,
In idle golden freighting,
Bright leaves sink noiseless in the hush
Of woods for winter waiting.

"O suns and skies and flowers of June,
Count all your boasts together,
Love loveth best of all the year
October's bright blue weather."

If you have loved your lessons on leaf and flower and fruit, the children will love this poem, and rejoice in the beautiful familiar pictures it paints for them. Its words are sweet and simple, and few of them are strange. You will not need to analyze it line by line, though you may have to explain the "aftermath," and

"golden freighting." But if you heartily enjoy its music and beauty, the children will share your enjoyment. Their lessons should have helped to prepare them for this.

If it pleases you to gather the lessons into a Friday afternoon exercise, you may make a pleasant, helpful hour which the children will always remember. The written descriptions of leaf, flower, and fruit may be read, the poems recited, and the harvest hymns sung. If the room is decorated with leaves and fruits, and the boards are filled with appropriate selections, it may be a miniature Harvest Festival, and a fitting close for the October Lessons.

QUESTIONS FOR WAYSIDE LESSONS (FALL).

What is the color of the birch leaves now? Of the beech? The maple? The oak? The hickory? The elm? The chestnut? The pine? The hemlock?

What trees have you seen whose leaves do not change color in the fall? What trees have red leaves? What trees have yellow leaves?

Look for late strawberry leaves; for the cinque-foil; for the sweet-fern; for the raspberry leaves. What do you learn of their color?

How can you distinguish the oak from the maple leaf? The beech from the birch?

Describe the sumach leaf. How can "poison sumach" be distinguished from other kinds? What is the fruit of the sumach?

What fruits are found in the woods in October? What nuts?

Describe the beech nut. The chestnut. The hickory nut. The hazel nut.

Who knows anything of the witch-hazel? Who has seen its blossoms?

What late flowers may be found in October? Make a list of all you find.

What berries do you find now in woods or field? Describe them.

Look at some rose-bush. Do you find fruit? Describe it. *Name it.*

Has the milkweed "gone to seed"? How did it go?

What do you know of the farmer's harvests? Of the squirrel's harvests?

What seed can you collect on your way to school? How are wild seeds planted? Who plants the thistle? The beggar-tick? The acorn?

Write a letter telling what the fields have told you.

A SPRING LESSON.

(Reported in the hope that it may be suggestive to those teachers who are questioning how to teach.)

The children had been watching eagerly for the first signs of spring. The long Northern winter had outlasted their interest in snowballs and snow forts. Long before the winds had lost their keenness or the ice had disappeared from the pavements, the boys had collected on the bare spots in the sidewalk to play marbles, and the girls had produced their hoops and jump-ropes, to help the spring along. Inspired by the faith and hope of the children, the robins came back, by two and in companies, to sing their spring messages. The bluebirds were not to be outdone. They hurried so fast

after the robins that it was hard to tell which came first. Then the poplars shook out their gray tassels, the maples reddened in the sunshine, the winds repented of their iciness, and at last, one day in early April, Willie Lando came breathless into the schoolroom, bearing, close held in his grimy little hands, a pasque-flower.

"I found it out here on the prairie, beyond the motor track," he volunteered, pleased at the commotion excited by the advent of the welcome blossom. "By and by there will be heaps of 'em, — ground covered thick as spatters; but now they look just like little gray balls of fur. This was the only flower I could find."

The other children gathered around, to ask questions and to express their astonishment and delight. But their investigations were interrupted by the school bell which summoned them to their seats. The interruption was a brief one, however; for the teacher was wise, and knew the value of a word in season. Although the programme for the day gave the first period to arithmetic, Miss Hayes changed her plan, that she might teach the children the lesson that the pasque-flower came to bring. The enthusiasm already aroused might thus be strengthened and turned into channels where it would prove of most avail. So, after the morning hymn had been sung, and the child voices had joined in repeating the words of greeting, Miss Hayes introduced the newcomer to the children.

"Willie has brought us something to enjoy this morning," she said; "how many would like to thank him?" The little hands were lifted to speak the thanks, which were not belied by the eager faces. Willie sat up proudly in his seat, and mentally resolved to come to

school that afternoon, instead of going fishing, as he had planned. The questions were continued.

"What is the flower which I hold in my hand?"

Minnie called it a mayflower; James ventured to announce that the boys called those blossoms goslings; and Maud named it crocus. Miss Hayes heard them all, then talked with the children of the Easter just passed, and they repeated together their Easter hymn. Then she told them that the little blossom is called the Easter flower, or pasque-flower, because it blossoms at Easter, and comes to tell the children of the new life that will show itself soon in the budded trees and the brown-carpeted woods. They were glad to use the new name.

"Look closely at the flower and be ready to tell me something about it," Miss Hayes says, holding the blossom where all can see it.

The eager eyes were fixed on the flower, and the hands and faces soon indicated that some discovery had been made. "The flower is purple." "There is something like gray fur under the purple part." "I can see something yellow inside the flower." "The stem is covered with hair."

"Let us all look at the stem and think about it," Miss Hayes suggested. With her pencil to direct their eyes, and her questions to lead their thoughts, the little ones succeeded in finding, and saying, that "The stem is short, round, green, hollow, and is covered with silky hairs." The children who could remember all that they had seen, and could tell it in one sentence, were allowed to hold the flower and describe the stem to the class. They were eager to share the privilege. The eyes were summoned to watch while the description was given, to

see if it was wholly true. "Because we want to see the truth about the pasque-flower, and to tell the truth about it," Miss Hayes said gently.

The time was short, it seems. The eyes and lips had been busy, and yet they had been busied only with the stem of the little flower. "Shall we talk about it again to-morrow?" Miss Hayes asked. The glad "Yes!" betokened so much interest that she rejoiced in her change of programme.

Willie Lando retired with great dignity and sense of responsibility, to put fresh water in the vase that held the blossom. The next morning there was another lesson; and so on the next, and the next. Meanwhile the children had searched the fields far and wide, and had been rewarded by finding the blossoms in generous numbers for themselves. Before the lessons were done they all had flowers of their own, which they held gently and lovingly as they described them to Miss Hayes. The descriptions varied in completeness and in arrangement. The following is Willie's: —

"I found this little blossom out on the prairie, near the motor track, the 10th day of April. It is called the pasque-flower, because it blossoms at Easter time. It is the first flower we see in the spring. The pasque-flower has a short, round stem, which is hollow, and covered with long, silky hairs. There is one purple flower on the end of the stem. The flower-cup is made of six broad, purple leaves, which are silky on the outside. There are several rows of stamens inside the flower. They are like little threads, and have a yellow anther at the end to hold the pollen. The stamens are around the pistils. The pistils are white now, but by and by they will be like long brown feathers, which will

fly away in the wind when the seed is ripe. That is the way the pasque-flower is planted. Underneath the blossom there is a cup of narrow, silky leaves; these are folded around the bud to keep it warm. The leaves of the pasque-flower grow after the blossom has come."

On the blackboard next day we found a reading lesson for the children, which Miss Hayes had placed there: —

OUR PASQUE-FLOWER.

The winter snows were hardly gone,
When in her robes of fur
The pasque-flower came to cheer our hearts;
We ran to welcome her.

We knew her in her soft gray cloak,
Her purple silken gown,
And in the sunshine, too, we saw
Her dainty golden crown.

"Oh, tell us, little flower," we cried,
"How dared you come so soon?
The winds are cold. The other flowers
Will scarce be here till June."

"I came because the boys and girls
Were waiting for the spring.
I knew it would seem nearer if
I helped by blossoming.

"I wrapped me in my warm fur coat,
I donned my purple gown,
And borrowed sunshine from the skies
To wear upon my crown.

"I gathered courage then, and pushed
The soft brown earth aside;
For, since the warm spring sun had come,
What need to longer hide?

"I came to tell you how God's care
Had kept the tiny seed,
And that he cares much more for you.
Will you my message heed?"

3. Descriptions of Plants by Children in Primary Grades.

GERANIUM.

The parts of the geranium are roots, stem, leaves, and buds.

The roots look like little threads.

Some roots are white, and some are brown.

The roots grow down in the ground, and the stem upward like we would raise our arms.

The stem feels hard and rough.

In some places it is shiny, and some it is not. The leaf has a blade. The stem has little bracts.

The geranium leaf is shaped like a shield.

The veins in the leaf are shaped like a hand.

It is a tame flower.

Rena Ruth Russell. *First Year.*

THE GERANIUM.

The geranium is covered with white hairs. The parts of the geranium are root, stem, leaves, and blossom. The geranium has a fibrous root. The stem is round. It is hard at the top.

The leaves have long stems.

The leaves are scalloped on the edge. It has five veins which spread out from the stem. The blossoms are in clusters.

Hattie Hall. *First Year*

BLOODROOT.

The bloodroot grows in rich, damp woods.

The root is hard and thick, and has red juice. The stem is smooth and round and long, and of a reddish color.

The leaf is round, and has from five to seven lobes. There is only one simple leaf on a stem. The leaf is smooth. The flower is like a white star.

There is only two sepals. There are two rows of petals. There are four in each row. There are many stamens. There is only one pistil.

HEILMA NILSEN. *First Year.*

ANEMONE.

The anemone is the earliest of all the flowers in the spring. The root of the anemone is like sweet potatoes. The roots keep the food in the winter time, and in the spring feed the little new leaves. The stem of the anemone is long, round, and smooth. At the end of the stem is a whorl of leaves. The leaves are compound.

At the end of the flower-stem is a number of flowers. The anemone has from five to fifteen sepals. There are many stamens which carry the pollen. There are many pistils. They catch the pollen as it falls. Below the flowers is a whorl of leaves like a collar.

OSCAR APPLEQUIST. *Second Year.*

THE DANDELION.

I am a little dandelion root.

I live in a dark place.

A little boy found me, and pulled and pulled; and I was so long that he had to give it up, and he had to break me off. Then I pretty near cried.

I went where there was a big lady and lots of boys and girls.

They studied about me.

The children said I was a tap-root. Tap is a nickname for tapering.

JAMES BYRNES. *First Year.*

Would you like to know about the dandelion leaf?

The parts of it are the blade and petiole.

The blade is long, green, and flat.

The blade is deep cut.

The midrib and petiole are long.

The midrib is thick.

The petiole is short, and grows lighter-colored towards the root. The dandelion leaves are good to eat.

DOUGLAS KINCAID. *First Year.*

Miss B. gave me a dandelion stem, with a flower.

The stem is long.

It is a light-yellowish green.

It is cylindrical, smooth, and hollow.

Miss B. told us to trisect the stem.

There is sap inside.

It is like milk.

We can curl the stem.

It tastes very bitter.

RAY SMITH. *First Year.*

Willie and Hollis brought us some dandelion flowers to study about in school, and we had a lesson about it.

The dandelion blossom has hundreds of little flowers in one blossom.

There are five petals, but they are so close together that it looks like one.

There are five stamens, but they are so close together that it looks like a little tube around Mrs. Pistil.

Mrs. Pistil is longer than the stamens are.

Mrs. Pistil has two little mouths on the top of her head, and when the bugs or the bee does not come, Mrs. Pistil has to curl her mouths to get the pollen herself.

PEARL TUTTLE. *First Year.*

I am a little dandelion seed. I live on a dandelion stem.

I lived with my cousins.

I look like a little brush. I can see the other dandelions on other lawns.

I would like to go over with the other dandelions. Perhaps the wind will take me some day.

WILLIE CAWLEY. *First Year.*

JACK-IN-THE-PULPIT.

Jack-in-the-Pulpit grows in the woods near a dampy place, and we find the blossoms in under Jack, and we find the blossoms in May.

It grows about a foot high. We call it Jack-in-the-Pulpit because it looks like a little man in the pulpit. It is called spadix and spathe. Jack is called spadix, and the pulpit is called spathe. The corm is called Indian Turnip, and it is called Indian Turnip because under the roots is a hard corm which is sometimes called Indian Turnip.

The roots are fibrous, and grows right above the corm.

Jack has got compound leaves, and with parallel veins in it.

And it is folded in a leaf. There are two kinds of flowers; some flowers have stamens, and some have pistils, and they do not grow on the same plant.

THERESA ANDERSEN. (Nine years old.)

BLUE VIOLET.

It grows in the woods where the dirt is not very dry, and sometimes in moist places. It is low, and it blooms in spring.

It has a fibrous root, and there are many. It grows in a thick bunch at the top of the root.

The leaves are palmately veined; they are heart-shaped, and each has a stem of its own.

The corolla is dark blue; the lower petal has a spur; it is furry, and has dark-blue lines, and there are five petals to the corolla.

The calyx is green; it hangs down like a little ear. There are five stamens, and they are green on the lower part and orange color on the upper part.

The pistil is green, and it has a round top.

HILMA. *Second Grade*

Is it raining, little flower?
Be glad of rain!
Too much sun will wither thee.

'T will shine again,
The clouds are very black 't is true,
But just behind them shines the blue.

Art thou weary, tender heart?
Be glad of pain!
In sorrow sweetest things will grow,

As flowers in rain.
God watcheth; and thou shalt have sun,
When clouds their perfect work have done.

Copied by DORA DAHL

Flower in the crannied wall,
I pluck you out of the cranny,
Hold you here, root and all, in my hand.
Little flower, if I could understand
What you are, root and all, and all in all,
I should know what man and God is.

Copied by OLIVE HOLEN

BUDS.

On some twigs the buds are alternate, and on others they are opposite.

When the buds are opposite they look like this [drawing], and when they are alternate they are like this [drawing].

Just below each bud I can see where the leaf dropped off last fall. After the leaves had gone away last fall, the tree and the buds went to sleep, and slept all winter.

As soon as the spring came and the sap began to flow, the little buds pushed out their heads in the warm sunshine.

The little bud cradles are made of brown scales.

GERTRUDE SHERMAN. *Third Year.*

THE BEAN.

When I opened the bean I saw two little white leaves and a white sprout. It looked like this picture [drawing].

When the bean is planted, the white sprout goes down and makes the root, and two little leaves will come up, and the bean.

When the bean comes up it is in two parts, and two little leaves come up, and they are the bean.

I will show you the picture of the next plant [drawing].

After a while the little leaves that were in the bean will grow up in a little plant. The two halves of the bean will get green and brown, and as soon as they are brown they fall off.

MAY HAYES. *Second Year.*

THE BEAN.

When I split my bean open I saw two little leaves and a little sprout. The color of the leaves and the sprout are white. It looks like this [drawing].

When the bean is planted, the sprout grows down and makes the root, and the bean and the leaves grow up.

When the bean comes up it separates in two parts. Just between the two parts of the bean the same two little leaves are there. This is the way it looks [drawing].

After a while the leaves get bigger, and it looks this way [drawing].

By and by the two halves dropped off because they had no more food in them.

CATHERINE LOUGEE. *Third Year.*

THE BEAN.

When I looked inside of the bean I saw two little white leaves and a small sprout. I think you will like to see a picture of the inside of the bean.

When the bean is put in the ground the little white root goes down to the dark earth, and the little leaves steam, and the bean comes up to see the sunshine.

When the bean comes out of the ground it opens, and the same beans come up between the two parts. I will show you a picture of it.

When the leaves are real large they look like this.

After a while the beans get green, and then they wither and fall off.

AGNES GLESSNER. *Third Year.*

THE GERANIUM.

The geranium is a house and garden plant. It is an herb which grows one to four feet high.

We use the geranium to make our home look bright. The parts of the geranium are root, stem, leaves, and flowers. It has a fibrous root which looks like little threads. The stem is long, round, woody, erect, juicy, and diffuse.

It has a brownish green stem covered with hairs.

The leaves grow alternately from the nodes on the stem.

The parts of the leaves are, blade, petiole, and stipules.

The blade is green, kidney-shaped; it has a scalloped, lobed margin, and is palmately veined.

It is covered with little hairs, which make it feel soft and velvety. The petiole is round and slender. The stipules are two little green leaves at the base of the petiole.

ALICE PETERSON. (Eleven years old.)

THE RUE ANEMONE.

The anemone is found near the edge of woods, in the month of May. It has a fleshy root.

The stem is smooth and slender, it is short, and the color is green or brownish.

It has a cluster of leaves growing in underneath the blossoms in a circle called the involucre.

The blossoms grow in clusters; it has no corolla; it has from five to ten sepals, — in my blossom there are five sepals; and there are many stamens.

It has seven pistils; the color is purple.

BERNARD BENSON. *Third Year.*

GERANIUM AND OXALIS.

The leaves of both are net-veined. They both have short petioles. Their colors are green. The two blossoms grow in clusters. They both have five petals and five sepals. The sepals are pointed. The geranium and oxalis have ten stamens and one pistil. They are both house plants. The root of the geranium is fibrous, and the root of the oxalis grows in a bulb.

The geranium has a simple leaf, and the oxalis has a compound leaf. The geranium is kidney-shaped, and the oxalis is heart-shaped.

The geranium has a scalloped margin, and the oxalis has a smooth margin. The blossom of the geranium is larger than the oxalis blossom. The petals of the geranium are separate. The petals of the oxalis are joined together.

ANNIE BJORNSEN. *Third Year.*

THE DANDELION.

Early in spring we can see this brave little plant. A few days of warm sunshine is all he wants. After a while he will meet us with his bright golden face. Because of its bright color and sweet perfume the blossom is very attractive to bees, butterflies, and children.

Because it is so common it is not loved by some people. The gardeners don't like the dandelion because it is so hard to dig up. The root of the dandelion is very large. It has a thick middle part that sends out other small roots. The dandelion has long, green, slender, deeply cut leaves.

It has a yellow flower which consists of many little flowers.

When the petals fall off, a circle of down forms, and changes the flowers into a pretty little balloon.

IDA MELIN. *Third Year.*

THE GERANIUM.

The geranium grows wild in the southern part of Africa. The geranium has a fibrous root, — it is called fibrous because it is like threads. The stem is upright, and the branches spread. The shape of the stem is round, it is green, and it is covered with soft hair. One leaf is on each node; they are on opposite sides of the stem. We call these leaves alternate. The shape of the geranium blade is reniform, or kidney-shape. The margin of the leaf is crenate. The veins start from the petiole, and they spread like the fingers on our hands. The

leaf feels very soft. It is so soft because it has soft hairs on it. We find on the stem near the petiole are the stipules or scales. The little scales become dry and drop off. The geranium flower is in a cluster; they look like an umbrella, and they are called an umbel. The calyx has five sepals; the color is green, and the shape of it is more of a pointed shape. We find near the largest sepal there is a little hole called the honey-tube. The corolla has five petals, and the colors are different. There are three large ones and two smaller. There are seven to ten stamens, and one pistil; we find on the end of the pistil five little curls.

OLGA PETERSON. *Third Year.*

THE PASQUE-FLOWER.

The pasque-flower is found in March, and sometimes it is found in April first. It is sometimes found on the sunny hillsides, and sometimes in the woods under the trees.

The root is found under the earth. It is called the underground stem, and in winter it is under ground all the winter.

The stem is hollow, so that it can take up food from the earth. The stem outside is round, and it has on it soft hairs like down.

On the stem, a little way up, is a kind of cup called the involucre.

The leaves do not come until after the blossom dies down. Then the leaves start to come up from the root.

The blossom is very beautiful. Inside of the blossom are some little fine hairs, and at the end are some little bags.

Inside of the blossom are some little pistils which catch the dust, and the dust goes down into a little passage which is called the ovary, which holds the seed.

MABEL BONNESS. *Third Year*

THE SEED.

As wonderful things are hidden away
In the heart of a little brown seed,
As ever were found in the fairy nut
Of which children sometime read.

Over the pretty shining coat
We sprinkle the earth so brown,
And the sunshine warms its bed,
And the rain comes dropping down.

Patter, patter, the soft warm rain
Knocks at the tiny door,
And two little heads come peeping out
Like a story in fairy lore.

Copied by CLARA PETRI. *Third Year.*

MEMORY GEM.

A sower went out to sow his seed; and as he sowed, some fell by the wayside, and it was trodden down, and the fowls of the air devoured it.

And some fell upon a rock, and as soon as it was sprung up it withered away because it lacked moisture.

And some fell among thorns, and the thorns sprang up with it and choked it.

And other fell on good ground, and sprang up and bare fruit a hundred fold.

BISMARCK SCHWARZ. *First Year.*

PEAS.

We were going to plant peas in the can.

We first soaked the peas. We soaked them so they would sprout sooner.

If we dig up a pea that has been planted three days, we find a funny little sprout coming out of it. It is called the stemlet.

The seed leaves of the pea stay in the ground. They are to give food to the plant. They give food to the plant till the plant has strong enough roots to take its own food.

In a few days the stemlet sends three or four roots down into the ground. A little bud rises out of the ground. It soon turns into the real leaves of the plant.

ALICE MELONY. *First Year.*

THE SWEET-PEA.

I am a sweet-pea. I grew in a garden. I am purple and pink. One day a little girl came and picked me. The little girl took me home to her mother because I was so pretty. Her mother put me in a glass of water, and said I was a sweet smelling flower.

There were some more sweet-peas out in the garden, and a little rose-bush by it. I wonder if the little girl picked a rosebud.

NINA L. WILLIAMS. *First Year.*

STORY OF THE BEAN.

When I was young I lived in a long, green house and had five little sisters. In this house there were six rooms. There were no doors, but arches, one at each room.

We wore green dresses, and we used to sit along the side of the house. Our house had no windows, so we did not see what was around us. One day we heard a man and a boy with a pail.

The boy was just about to pick our house with us in it, when we heard the man say, "Jimmy, don't pick those beans; we'll let them go to seed;" but we did not know what going to seed meant.

When we grew older, we wore lighter dresses and lived in a brown house. One day when we were very thirsty, and the house was very dry, it cracked, and we tumbled out. Then we

saw what was around us. We saw that our house was on a vine, and the vine was climbing a pole.

Then we saw the man and the boy with a basket; and the boy said, "Look; the beans are all over the ground." Then he picked us up, and we were put away in a dark place, where we went to sleep.

The next spring we heard the man say, "Come, Jimmy; we will plant those beans." And we were put into the warm, moist earth, and in three or four days we sprouted.

LEILA WITCHIE. *Second Year.*

AN ACORN STORY.

I am an acorn, and my mother is an oak-tree, and I have lots and lots of brothers and sisters.

We all live in the dark, cool forest. There are not many people out here in the forest, only hunters and trappers. I have to hang on with all my might now, because if I did n't I would tumble.

Last night I almost fell off; and I think I shall let go next time, to see where I shall go to.

Well, I let go this morning; so here I am on the ground without my snug little cradle. It is getting so cold that it makes me shiver nearly all the time. I got so chilled that my skin is broken. Oh dear, how I wish I had stayed with my mother!

It is night; and here I am in a dreadful storm, being driven into the ground by the rain and hail.

Now I am in the dark ground with my skin broken, and I am afraid I shall never see my mother again.

There is a little embryo inside of me, with a little root and stem. But now I am glad I did not stay with my mother in my old home, because I am growing up just a little way from her.

If I am patient, and no one cuts me down, after many years I will be a grand old oak, just like my dear mother, out here in the cool, dark forest.

PHILIP EMERSON. *Third Year.*

THE MORNING-GLORY.

The morning-glory is a dicotyledonous or exogenous plant, because it has two cotyledons or seed-leaves.

The pod is round, and has three cells, with two seeds in each cell. The calyx adheres to the pod.

The seed is covered with a brown coat or covering. In the seed we see the embryo and the albumen. The albumen is stored around the cotyledons instead of in them, as it is in the bean and pea. The cotyledons are all rolled up when in the seed, but are of quite a good shape. When the seed is green the albumen is soft and gummy, and of a light-pink color. It would not keep this way; so as the seed ripens the albumen hardens. The plumule cannot be seen, but it is there; and if you soak a morning-glory seed you will see it.

The three cells in the pod show that there are three pistils in the blossom.

The root is small and fibrous; it is of a light-brown color, and has little rootlets. These rootlets get mineral food from the ground.

The radicle is the part that grows between the root and the cotyledons. The plumule is the leaf-bud between the cotyledons.

The stem is round and green; it is jointed, slightly hollow, and slightly wooded. There are little hairs on it which all point downward.

The leaves are heart-shaped, and have an entire margin, and are net-veined. They are attached to the large stem by tiny stems called petioles. The leaves are simple, and grow alternately.

The flower grows in the axil of the leaf. Its parts are the stamens and pistils, the corolla, and the calyx. It is monopetalous, and is funnel-shaped. The corolla is not divided, but there are five lines which show where it might be divided.

The filaments of the stamens are fastened to the corolla. There are three pistils which are joined up to the stigma.

The blossom opens early in the morning, and then closes for the day.

The fruit of the morning-glory is dehiscent, because, when it is ripe, the pod breaks open and scatters the seeds. It is a plant that lives one year. The morning-glory seeds are planted, and the blossoms are used for bouquets.

HELEN L. MOODY. *Fifth Year.*

CLOVER LEAF.

Leaves are flat and thin green bodies that make the foliage of plants and trees.

The leaf of the clover is divided into three little leaflets, and on account of this is sometimes called trefoil.

The leaflets are oval in shape, with a midrib up the centre, and many little veinlets branching out from it.

At the bottom of the stem the stipules grow fast to the leaf-stalk.

The upward face of each little leaflet is soft like velvet, and the under side is lined with soft silky hairs.

A field of clover makes a pretty carpet of green for a lawn; and when the sweet blossoms come in June it is a pretty sight, and fills the air with fragrance.

—— ——. *Third Year.*

MINNEAPOLIS, *May* 8, 1890.

DEAR MISS GOWDY, — This week we have had a lesson on the clover. I thought it was a beautiful lesson, so I shall try and write you what I can remember about it.

The clover is a little plant that grows very near the ground, with many little stems growing from its fibrous root.

On the top of each little stem there are three little leaflets. The blossoms also grow on a long stem in the shape of an oval.

There are many little flowers in one head, and our teacher

said the bees call them the horns of plenty. I guess they do that because each little flower has so much honey in it.

When the clover-blossom comes I pick a little basket full, and then sit down on the grass and pull them to pieces, so I can suck the honey out of each little flower.

When the blossoms wither they do not fall off, but stay in the calyx.

I cannot remember any more, dear Miss Gowdy, so good-by.

Your loving pupil,

ETHEL MOREY. *Third Year.*

MINNEAPOLIS, MINN., *Dec.* 14, 1892.

DEAR AUNT, — We have been studying about trees, and I want to write and tell you about one I see every day on my way to school. I call it a linden, but some people call it a basswood. There are many lindens along the streets in Minneapolis.

The trunk of the linden is very straight. The bark is rough and dark-gray in color. The inner bark is very thick. They use it in making mats and coarse rope.

The wood is white and very soft. It is used in making dishes and furniture.

The leaf is roundish, with a pointed apex and heart-shaped base. The leaf is very one-sided.

The fruit looks like a bunch of grayish-pink peas on a long stem, which is joined to a long, narrow leaf like a wing. We had some in school, and they were very beautiful.

The wind carries these wings about with the fruit hanging to them, so that new trees come up a long way from the mother tree.

Your loving nephew,

FRED KINZIE. *Third Year*

OAK LEAVES.

There are three kinds of white oaks. We can tell them by their leaves, because they have short petioles and no bristly points on the leaf-margin. The kinds of white-oak leaves are the bur, white, and swamp.

I can tell each kind, because the bur has a large, thick, coarse, irregular-lobed leaf; the white oak is deeply lobed; and the swamp oak has quite a fine leaf with a waving margin.

The petioles of all are short; the blades are oval-shaped, net-veined, and have an entire margin, and vary in size.

There are as many kinds of black oaks as white oaks, — the scarlet, red, and pin. The scarlet-oak leaf has a long petiole, having deep regular lobes, usually five in number.

The red-oak leaf is very much like the scarlet, only it is larger and has a short petiole. The pin oak has a small, fine, almost skeleton leaf with a long petiole. Galls are often found on the leaf, caused by insects biting the leaf, and the sap forming a hard bunch. In the fall these leaves turn to beautiful shades of red, yellow, and brown.

LYDIA HEFFERON. *Third Year.*

OAKS.

We have two species of oaks, the black, and the white. The different kinds of black oaks we have seen and studied are the scarlet oak, pin oak, and red oak; and the different kinds of white oaks are the bur oak, swamp white oak, and the real white oak.

Both grow in about the same soil and climate, and both are about the same size, only the white oaks have the thicker trunks. They both are the same shape, with far-spreading branches, but the branches of the white oaks are more irregular, and so give larger tops to the trees. They grow much faster than the black, but do not live so long.

The bark of both is rough, that of the black oaks being dark and deeply furrowed, while the others have a light, scaly bark, which is easier to pick off, and thinner. The inside bark of both is rough, dark-yellow, and that of the black is used for tanning.

The wood of the black oaks is heavier, darker colored, and is much coarser grained than the white. The wood of the oaks which grow here is used mostly for fuel and posts, as it is too coarse for other uses; but some kinds of oaks are used a great deal for furniture, inside work on houses, and parts of ships.

The foliage of the white oaks is heavier than the black, and the leaves are larger and thicker. The leaves of the black oaks are a bright, glossy green, while those of the white oaks are a light dull-green. Most of the black oak leaves have deeper lobes than the white, and the lobes are sharp and bristle-pointed, while those of the white are round and smooth. The veining in both is alike.

The bitter acorns of all the black oaks have smooth cups, while the sweet ones of the white oaks have rough cups, sometimes fringy at the top.

The leaves of both turn to many beautiful colors in the early autumn; but later, after the heavy frosts come, they turn to a dark brown, and those of the white oaks fall, but those of the black oaks stay on all winter, and fall as the new buds begin to come in the spring.

The black oaks sometimes have a light-green ball, which is called an oak-ball or oak-apple. It is formed by little insects. The white oaks do not have these, but have a smaller ball on the leaves and small twigs, which is called the oak-gall. It has inside of it a little egg about as large as a pea, and inside of that is a little fly all curled up for winter. Ink is made from some oak-galls.

MOLLIE DEMING. *Fourth Grade.*

4. Plant Lessons.

Grade I.

Teach to find and name the parts of a plant, — root, stem, leaves, bud, flower, fruit. Add the uses of the parts. Simple descriptions, always from specimens, to awaken interest and to occasion accurate observation and correct expression, as well as to teach facts. In observation, lead children to study the truth; in description, encourage right arrangement of ideas.

Grade II.

Review work of previous year. Add parts of leaves — petiole, blade. Note margins, — plain, wavy, toothed, etc. Shapes, — oval, round, lance-shaped, etc.; veins, with arrangement. Surfaces, — smooth, woolly, hairy, etc. Terms taught when they are necessary to accurate description. Add parts of flower, — calyx, sepals, corolla, petals, stamens, pistil. Pupils should give connected descriptions.

Grade III.

Review and continue previous work. Describe different flowers, and collect specimens. In spring study trees of Minneapolis. Watch the development of leaf buds. Note covering and arrangement. Study shape and arrangement of leaves, qualities and uses of fruit, time of ripening. Learn to distinguish and name familiar trees. Observe the germination of seeds, and the growth of young plants. In fall add to the study of fall flowers observation of seeds and fruits. Make list of those observed, and note resemblances and differences. In this and the following grades the pupils should record their observations in note-books.

GRADE IV.

Study differences in stems, roots, leaves, flowers, fruits. Group plants or parts of plants, according to resemblances. Simple oral and written descriptions of plants studied, selecting as many as possible from one family. The rose family is suggested. Note resemblances and differences. Collect specimens and study carefully the habits and uses of plants. Use note-books.

GRADE V.

Review and continue work of previous grade, adding fuller study of the trees of Minneapolis. For reference use Apgar's "Trees of Northern United States." In studying specimens, note carefully resemblances and differences.

GRADE VI.

Study of plants used for food. Use as a basis of study the fruits and vegetables found in the market. Lead to reading of food plants of other countries, — tea, coffee, etc. Distribution of plants in connection with both Geography and General Lesson.

III. LESSONS ON ANIMALS.

STUDY OF INSECTS.

The first step in the observation of insects is to lead the children to recognize the characteristic marks, or at least those which their own eyes can easily determine. Small animals, no internal skeleton, body in three segments, covered with a horny skin; three pairs of legs attached to middle segment, usually two pairs of wings. The children should collect specimens, observe and compare, until these points of general resemblances have been fixed in their minds. Then they may examine individuals more minutely, recording the results of their observation. Following the study of a single specimen should come the comparison of specimens which differ. The question emphasized should be "Why?" as soon as the "What?" has been answered. The teacher should guard against telling the children what she has seen, instead of leading them to see for themselves. Her questions should be definite and direct, requiring thoughtful answers.

The preparation of material is the first step in the lesson. While the pupils should be encouraged to make collections for themselves, the teacher should not trust to these for her material. She should obtain for herself enough specimens to supply her class. The only needed apparatus for catching the insects will be the butterfly net and a pair of hands. They may be

killed easily and quickly by placing them in a wide-mouthed bottle containing a preparation of cyanide of potassium. A few cents' worth should be placed in the bottle, covered with water, and enough plaster of Paris added to form a coating through which the fumes can escape. This bottle should be kept tightly corked, and distinctly labelled "Poison."

For mounting specimens, use a wooden or stout pasteboard box, and glue to the bottom small pieces of cork. Cut stoppers in layers for this purpose. Use needles or slender pins. A particular kind of pin may be bought for this purpose, if the collection is elaborate. Insects gathered in quantities, and needed for class use, may be preserved in alcohol. They should be dried before using. Butterflies cannot, of course, be so treated; they may be folded in paper.

OUTLINE.

Children who have observed animal life during the first three years of school life will be ready for the detailed study suggested in the following outline: —

Plan (as with other animals).

I. As a whole, — size, color, covering, habits, home, use.

II. Parts, — name, movement, use, and adaptation to use.

Observe;* record by words and drawing; describe orally and in writing; compare with other insects previously studied.

STUDY OF THE GRASSHOPPER.

A common insect, found everywhere in the grass; green, yellow, or brown; having a tube-like body from one to two inches long (according to specimens seen). This body is in three parts: head, thorax, abdomen. Find and name parts.

HEAD. — The head is long and narrow, and moves very easily. There are two large compound eyes on the sides of the head. (Use microscope if possible.) A pair of jointed feelers is attached to the head. There are two pairs of mouth parts.

THORAX. — The thorax is in three bands; it seems almost flat above and below. Two pairs of wings are attached to the thorax. The outer pair are long, narrow, and stiff, covering the inner; the inner wings are thin and delicate, and folded like a fan. These are of different colors. Some have a bright orange band at the edge. These inner wings are used in flying. There are three pairs of legs, one pair attached to each segment. The hind legs are long, stout, pointed, stiff, and used for jumping.

ABDOMEN. — The abdomen is long and slender, made of segments. In the sides of the segments or rings are openings showing the ends of the breathing-tubes.

HABITS. — Grasshoppers feed upon the grass and leaves where they are found. They deposit their eggs in the ground or on twigs. The young have not full-grown wings.

Why do children say, —

> "Grasshopper, grasshopper, grasshopper gray,
> Give me some molasses, and I 'll let you away"?

Read Leigh Hunt's "Ode to a Grasshopper;" appropriate chapters from "Seaside and Wayside," D. C. Heath & Co.

STUDY OF BUTTERFLY.

Materials: caterpillars, with the leaves upon which they feed, chrysalides of different butterflies, and the perfect insects. Keep the caterpillars in a glass jar, or box covered with netting, so that the children may observe the change from the larva to the pupa state. Observation out of doors.

Observe the butterfly; compare with the grasshopper. How many parts has the body? Compare as to shape and size. To which parts are the wings attached? The legs? Can you see any parts growing from the head? Uncoil the long tube. What is its use? How do you know? Watch butterflies out of doors, and see if you can discover its use. Have butterflies any teeth? Why? Draw the two antennæ. What is their shape? How many eyes has the butterfly? Where placed? Describe them. How many legs? Compare with the grasshoppers. What use does the butterfly make of its legs? Any other use?

Observe the wings. How many? Shape? Color? Compare both sides. Covering? Is this covering found on any other part of the body?

What are the habits of the butterfly? When is it seen? Why? What is its position when feeding? When at rest? Can you think of any reason for the duller color of the under side of the wings?

Observe the larva. How does it differ from the butterfly? Describe the body. How many segments?

Feet, how many? Alike or different? How? To which segments are the thin pairs attached? The others? Find the mouth; eyes. Observe the movements. How does the caterpillar move? How eat? How much does it eat? What kind of food? What does it do when it has eaten enough? Have you seen it? Watch caterpillars out of doors.

Tell class of silk culture and the work of the silkworm. Speak of the larvæ of insects injurious to vegetation, — canker-worm, etc. Look for chrysalis without cocoon.

Find and describe a caterpillar's nest. Who made it? When? How? (Compare bough having nest with other boughs.)

Look for butterflies' eggs. Where do you find them? When? How arranged? How fastened to twigs? How large? (Compare moth and butterfly, — parts, habits.)

Lead to the thought of the butterfly as a type of new life. Why used on Easter cards? (Read from Mrs. Gatty's "Parables from Nature.")

STUDY OF BEETLE.

I. Where found? Doing what? Size? Shape? General characteristics.

II. Compare with grasshopper and butterfly.

1. As to number of parts of body.
2. As to attachment of wings and legs.
3. As to appendages to head.

III. Observe head. Look for eyes. Where? How many? Kind? Use microscope if possible.

Antennæ: Shape, structure? Watch movements of beetle and infer use.

Mouth parts: Character, — hard or soft? Sharp or blunt? In what direction do they move? How many parts? Used for what? Observe.

IV. Legs: Structure, — how many parts? Use of feet.

V. Wings: How many pairs? Describe outer pair; inner. How folded? Use of each.

VI. Habits: Home, food? How adapted to its life?

VII. Ask at home for names of harmful beetles; helpful ones. Study scavenger beetles if possible. Potato beetle. Food of each. Compare the male and female of the latter. Are beetles bugs? The "lady bug?" "Potato bug?" Why?

VIII. Look for the young of beetles. Where found? What are they? Habits?

IX. Draw the beetle. Write connected description from outline.

X. Read Andersen's "Story of the Beetle who went on his Travels."

STUDY OF BEE.

I. Study honey-comb and honey. Shape of cells. Why so shaped? Use? Use of wax to us. Use of honey? Where does the bee get the honey? Observe bees out of doors. What does the bee do for the flowers? (If the children know the essential parts of the flower, dwell upon this topic, and ask children to make lists of flowers where they find bees honey-gathering.)

II. Compare with butterfly, beetle, and grasshopper.

Add closer and more detailed observation of legs, with the "pollen baskets." The sting. How does he get honey? With what organ?

III. Read of habits of bees; workers, drones, queen; the young swarming; life in winter.

IV. Read to children part of John Burroughs' "Locusts and Wild Honey," and "Birds and Bees."

V. I have seen a bee-hive used as a sign by a savings bank. Why? Would a butterfly be so used? Why not?

VI. Commit to memory parts of Emerson's "Humble Bee." Read or sing, —

> "Buzz, buzz, buzz,
> This is the song of the bee."

Study wasps and ants in same way.

LESSONS ON THE SPIDER.

Compare with some insect, as the bee. Emphasize the fact that the body is in two sections, and that there are four pairs of legs. To which part of the body are the legs attached? Describe the abdomen. Can you find eyes? Mouth parts? What is the home of the spider? How made? What use besides that of home? What is the food of the spider? Watch a spider as he catches a fly. Describe what you see.

Have you found any spiders' eggs? Where? Describe them. Where have you found spiders' webs? Why there? Tell the story of Arachne.

LESSONS ON THE SNAIL.

I. Make a collection of shells. Learn to find the whorls, and to name the spire, the apex, the opening or aperture of snail-shells. Draw the shell.

II. Search for snails under damp leaves in woods or meadows, by muddy brooks. Keep in a glass jar filled with water, and observe movements and parts.

III. Observe the disk upon which the snail rests. This is the *foot.* How fast does it move? How?

What organs do you observe in front? These horns are *tentacles.* The black dots are eyes. How does the snail use the tentacles? Do they move? How?

IV. Does the snail ever come to the surface of the water? What happens then? How does the snail seem to breathe?

V. What does the snail eat? With what? Watch through the glass if the slime has gathered upon it. Use a pocket magnifying-glass. (Tell the children the structure of this "ribbon.")

VI. Place the snails upon a glass. Do they move? What do you observe on the glass? What is its use? Where is the path of the snail usually? Why would the slime be needed? What does the snail do when he is frightened? What does he eat? Read in Andersen's Fairy Tales of the snail in "The Happy Family."

(For detailed study of the snail, teachers are referred to Morse's "First Book of Zoölogy," American Book Company.)

LESSONS ON THE CAT.

I. Habits.
II. Structure as adapted to life of the animal.
III. Care of the young.
IV. Our care of cats.
V. Stories of cats, and stories of tigers.

I. Habits. Have a cat in the schoolroom. Some child will be glad to bring her pet. It should be one accustomed to the presence of children. Let it move about, and ask the children to observe its movements. Allow the children to feed it at suitable times. Compare with their cats at home.

"What can cats do that you cannot do?" "They can catch mice and birds. They can climb trees. They can spring farther and run faster than we can. They can scratch and bite." "What do they eat?" "I give my kitty bread and milk and meat." "How does she drink the milk?" "She laps it with her tongue." "If you should not feed her, would she go without food?" "No; she catches mice or birds." "Let us see how she is fitted to do these things; why she is a good mouse-catcher; why she needs to spring and to run."

Name and find all the parts of the cat.

HEAD. — Observe the eyes; adapted to see in the night. How? Why?

The EARS. — Quick, alert. Why?

The FEELERS. — Sensitive to touch. Why?

The TEETH. — Fitted for holding and tearing. Why?

The TONGUE. — Shaped like a spoon when lapping. Furnished with a rough surface. Why?

Observe the FEET. — Furnished with sharp, curved claws, five on the fore foot, four on the hind feet. Why sharp? Why curved? These claws can be drawn into a sheath, into which they are fitted. Why? The feet are cushioned. Why?

The cat is light, quick, and quiet in her movements. Why? Why does she need to be able to climb trees? To spring? To see in the night?

Who has seen young cats? What are they called? How are they like their mother? How different? What is their food? How does the mother carry them? How do they play? What are they learning while they are playing?

What should we feed our cats? Why? How? When? In what kind of a place do they like to stay? How shall we treat them? Do they like home? Like people? (Read to the children "The Christmas Tree for Cats," by H. H. Encourage the pupils to tell stories of their kittens at home. Show picture of a tiger, read stories, and compare.)

LESSONS ON THE HEN.

(Prepare a box, as a soap or starch box, by sawing out three sides, leaving about two inches at each corner. About this, stretch wire netting; this will admit air, and allow the children to see the hen easily. Let them provide corn and water. Some one of them will doubtless lend his pet hen. If the school is in the city, a live chicken may be obtained in the market.)

Feed her, and observe movements. She seizes the corn with her bill, swallowing it whole. See how she pecks at the piece of turnip or cabbage. How does

she use her feet? Does she hear? How do you know? Can she see anything in front of her? Behind her? How? What does the hen do when frightened? When pleased? Who has seen a hen at home? How does she get her food? What is she doing all day? What are her little ones called? How does she care for them? Are they like their mother?

Observe, —

I. COVERING. — Feathers, warm, light. Note difference in size, shape, stiffness of feathers on different parts of the body.

II. HEAD. — Bill hard, horny, short, upper part curved over under part. Does the hen chew her food? Has she teeth? Does she breathe? Through what? Can she hear? How do you know? Where are her ears?

III. WINGS. — Use, structure.

IV. LEGS and FEET. — Covering. Why? Number of toes in front; in back? Claws, sharp or blunt? Strong or weak? How used? Why strong?

V. Of what use is the hen to us? How should we care for her?

VI. Study of an egg. Of what use is it to us? To the hen? What is its shape? Color? Size? Is it rough or smooth?

PARTS. — Shell thin, brittle, lined with membrane.

Soft, almost colorless albumen or "white," becomes white in boiling. (Have hard-boiled egg, as well as uncooked specimen in class.) Look at the yolk. Size? Shape? Color? In what held? Look for germ in yolk. Do you find twisted cords in the albumen? Can you think of their use? The teacher will tell you.

How many eggs a day will the hen lay? How many

does she sit upon? How long must she sit before chickens are hatched? How does the little chicken get out of its shell? Which is more helpless, a baby chicken or a baby boy or girl? Can the chicken walk? Run? Feed itself? Can the baby?

VII. Study of feathers. (Collect specimens which differ.) Find and describe the quill, shaft, barbs. Compare a feather from the wing with the fluffy body-feathers. How do the tail-feathers compare with the wing-feathers? The hen "ruffled" her feathers when disturbed; how did she do it? Why are the quills hollow? Why are the barbs fastened together in wing and tail and not in the feathers covering the body? How does the hen "brood" her chickens? Is she a kind mother?

LESSONS ON THE DUCK.

I. Compare with hen.

1. In what alike?
2. In what unlike?

II. Observe the HEAD. — Shape, structure of bill. Note the hair sieve that allows the water to drain away and leave the desired food in the mouth. Do you find nostrils? Ears?

III. FEET and LEG. — How placed on the body? Compare with hen's. Three toes webbed. Where is fourth? Draw the duck's foot.

IV. Compare plumage with hen's. Why more oily? What can the duck do that the hen cannot? How is she fitted to do this?

V. Story of the hen who hatched ducks. Andersen's story of the Ugly Duckling.

VI. What birds do you know that are most like the duck?

Tell the story of the Ancient Mariner.

LESSONS ON THE CANARY OR ROBIN.

Like the above, emphasizing structure of bills and feet.

Write a list telling what you have found in all the birds you have studied. What in the duck only?

LESSONS ON FISHES.

(Minnows or gold-fish in glass jars, and also some dead fish obtained from a market. Observe movements and habits in living fish. Study structure from the other.)

How fitted to live in water? Shape (boats are patterned after fishes).

SCALES. — Smooth, overlapping, slimy, offering little resistance to water. Why not feathers? Power to breathe by means of gills.

The fish is a cold-blooded animal, and so is fitted to live in water. Structure of tail and fins. How many fins? Where? Structure? How is the tail used in swimming? How are the fins used?

Does the fish hear? See? What is its food? How does it get food? Has it teeth? What fish do you know best? Tell its color, shape, covering, habits.

Tell the children of the migration of fishes. Of salmon-fisheries. Of the fishing off the Banks of Newfoundland. The life of the fisherman. Longfellow's poem, "The twilight is sad and lonely."

SPECIMEN LESSONS.

EGGS.

I have seen a collection of eggs. They were all different shapes and sizes, and some are blue, and white with brown spots, and some are brown. We have a hen's egg in school. We broke a little of the shell off, and it was very brittle and smooth. On the inside there is some white lining, and when you pull it it will stretch.

Next to the skin there is the white part of the egg, and it is a little thicker than water.

Next to the white part it is yellow, and they call it the yolk.

Little chickens come out of hen's eggs.

HERBERT KNOWLTON. *Second Year.*

A BULL-HEAD.

A bull-head has a large mouth and a large head. His body tapers and is brownish-green.

His fins are to help him swim, and he has three, — one on each side, and one on his back.

They are made out of thin skin, and bones under the skin.

On the other side of the body it is white. He makes his gill go out and in all the time.

He has whiskers, but they look like horns. He has three teeth, and one is on his tongue.

The tail is fan-shape, with fringe at the end. He is very slippery, and if you pick him up he feels like a piece of ice.

He has no scales, but tough skin, and was caught in the Mississippi river.

MABEL BENTON. *Third Year.*

THE RABBIT.

I have been looking at two cute little rabbits, and I thought I would tell you something about them.

[illegible] but they like the [illegible] The home that they make is [illegible]

[illegible] and they would put their [illegible] and put their little heads into [illegible]

[illegible] When they wash their faces they stick [illegible] then it washes its face. [illegible] seems to me.

[illegible] and puts it up close to [illegible] So he moves it again [illegible]

They [illegible] can find.

[illegible] white spotted with gray. They are [illegible] They are covered with fur which is [illegible]

The rabbit is a [illegible] because it has a back-bone.

The head is very pretty in shape. The ears are long, and pink inside. I can see the little red veins running through the ears. It has beautiful large, round eyes, and when the sun is bright the eyes are like garnets. Their teeth are long, and they look like pearl. They have four on the upper jaw, and two on the lower jaw.

I can see the tracks in the winter. They look so cunning hopping around. I have seen them stand up on their hind legs and curl their front legs up.

They run wild by our house, and even on the sidewalk. I have watched them play around in the lumber-yards. I think they are very quick in their motions. With such long ears they can hear exceedingly well.

My grandpa had two rabbits and a cat when I was down there, and after a while the cat and rabbits were friends. When the cat was asleep the rabbit would jump over the cat. And they would [illegible] paws on her and lie down beside her. It was very [illegible] see them, but they ran away before we came home.

"And the rabbit from his pathway
Leaped aside and at a distance
Sat erect upon his haunches,
Half in fear and half in frolic,
Saying to the little hunter,
'Do not shoot me, Hiawatha.'"

AGNES GLESSNER. *Third Year.*

THE BUTTERFLY.

The butterfly lives only one season. Its body is rather slim and is divided into three parts — head, thorax, and abdomen. The body is covered with little scales. The head is set on so that it can move freely.

On the head are two large compound eyes. With these eyes he can see in all directions. And placed between these eyes are three simple eyes, hidden by the little hairs on the head. Its feelers are fine, like hairs, but have knobs on the end. They act as a sense of touch.

The mouth parts are so small that they cannot be seen only through a microscope, but we find they are very curious, — the under lips being drawn down to form a long, hollow proboscis, which the butterfly thrusts into the longest and narrowest flowers for honey.

The upper lips are hairy, and when the butterfly does not use its proboscis, it rolls it up, and the upper lips protect it. The butterfly drinks its food, so that makes it a drinker. Its food is chiefly honey.

Attached to the thorax are different appendages, — the legs and the wings. There are three pairs of jointed legs. This insect is not a walker, seldom using its legs, only when eating or resting.

There are two pairs of wings, and they are covered with dust which looks like scales.

These scales give the wings their color. Their wings are

stretched a little network of threads. It uses its wings, and not its legs for moving about.

The upper and lower wings are not hooked together, like that of the moth. Its wings are called vans. Their wings are very bright and pretty. The upper wings of the butterfly are the widest, and they have smooth edges, and are triangular in shape. The lower wings of the butterfly are rounded, and have not such smooth edges as the upper wings.

True butterflies fly only in the daytime, and not at night. They come out at about nine o'clock, and go to their hiding-place about four or five o'clock in the afternoon. They also hide away on a rainy day.

The wings are painted with very pretty colors. The rainbow colors can be found on most every butterfly except a few.

When the butterfly rests, its wings are held up; and as the upper side is the brightest they are protected, because the under part is generally the color of the flowers on which they feed, or the color of a dry leaf. It is also protected when flying, for it travels in a zigzag direction through the air.

The butterfly goes through all the changes, — from an egg to a larva, then it is a chrysalis, and finally an imago, or perfect butterfly.

NELLIE HUNTLEY. *Fifth Year.*

THE LAND-TORTOISE, OR MUD-TURTLE.

(Told to teacher.)

I found my turtle under a piece of paper on the sidewalk. When I brought it home it ran around in the water. Then we took it out, and she walked on the floor. It was three inches long. It was a little one.

The mud-turtle has four legs. It has a sharp tail. When you take him by the head the head sneaks in.

ALEXANDER JASSELOWITZ. *First Year.*

FABLE OF THE HARE AND THE TORTOISE, OR THE RABBIT AND THE TURTLE.

(Oral, written down by teacher.)

Once there was a rabbit by a creek, and he saw a mud-turtle. He said, "Do you want to try a race?" Then the rabbit laughed and said, "To-morrow at the noon we will have the race." He came to-morrow at the noon and said, "Let me try now the race." The rabbit ran fast, and the mud-turtle went not so fast. The rabbit laid down by a stone to sleep. And the mud-turtle went by the rabbit, and he began to laugh.

Then the rabbit woke up, and he go on, and go on, to the place, and when he got there, there the mud-turtle was.

And the mud-turtle laugh because he beat him on the race.

MOSES COHEN. *First Year.*

THE RABBIT.

(Report of description given by foreign child.)

MEMORY GEM.

"He prayeth best who loveth best
All creatures both great and small,
For the dear God who loveth us
He made and loveth all."

The rabbits lives in the woods in little holes. He is covered with soft fur, gray and white. The rabbit's head is just like a egg shape. His eyes shine, they are kind of gray. His ears are long, and they lay down when you don't call him. When you do, he puts them up. His mouth is cut in half; it looks like three lips, two above and one below. He has four long, sharp teeth, so he can cut and gnaw. His nose looks just like he 's shivering. His whiskers are white and long. He has a body soft. His tail is short, and he curves it up. The rabbit's

legs are short in front and long in back. He has five toes in front and four in back. They have life in them to go fast.

He has scratchers in his toes.

LIZZIE PARMEN. *First Year.*

HABITS OF A RABBIT.

The wild rabbit lives in the woods. He lives in holes down [illegible] sometimes they make it, sometimes they find [illegible] He eats cabbage, grass, tender bark, and leaves.

[illegible] he hops.

[illegible] and puts his feet all under him.

[illegible] he sits up on his two hind feet, and [illegible] just like we use our hands. I know [illegible] and I saw him wash his face. [illegible] the color of the snow. He is [illegible]

ESTHER SWILER *First Year*

[illegible] OF A RABBIT.

([illegible] by a child.)

[illegible] and his father told [illegible] in his own little bed. [illegible] and beg all day, I [illegible]

[illegible] He had three brothers and [illegible]

[illegible] She was eating grass in a [illegible] be a cow. She [illegible] eyes. The rabbit [illegible]

[illegible] and the goat cried, [illegible] get off my [illegible] and he started—

and there was nothing to do but stand and stare. All he saw was the spot, with nothing on it. The rabbit had run away, and there was nothing but a pair of flying feet and just a little part of an eye.

Four little lambs, running by, called to the rabbit to come and play with them in that pretty spot of clover.

Then there was a bellow and a snort close to his heels, and a great big bull tried to catch him. There 's no telling whether he will get away, but he does.

He hears a whinner and a snort, and a pony kicked up his heels, pretending to play; and the rabbit cried, "I ain't come to play."

Close to his heels there came a pack of flying dogs. That was the worst thing of all. He goes in a hole in the fence, and the dogs stare at his toes — and they did n't see his toes very long.

He met three children, and one tried to feed him clover while another tried to catch him with a rope and a string, and a *ketch* knot on the end. He got away, and ran on and on when all other young things were going to bed. When you hear the wind, it 's the little rabbit rushing here and there; and when the rain goes pit-a-pat, it 's his feet pattering by.

RAYMOND BARRETT. (Seven years old.)

THE HEN.

The hen is one of the most useful birds that there is. The hen has very small wings for such a large bird, because they do not fly. The rooster has larger wattles and comb than the hen. The bill has a little hook on the end, so that they can pick up the food that they eat. The hen has a very small tail for such a large bird. The hen's feet are not like the duck's, because they do not swim. The hen has nails so that they can scratch; because the hen scratches she belongs to the scratcher family. The colors are black, white, gray, and brown. When the hens set it takes about three weeks for the egg to hatch. Just after

the chickens are hatched, they have no feathers on; they have down. The hen eats corn, bread, wheat, stones, and little pieces of glass. After the hen eats her food it goes to the crop, then it goes to the gizzard, then it gets ground up.

The hens have to have stones to help grind up the food. When we lived in the country we had a hen that would lay eggs without shells on, in the winter. People burn bones for them to eat, because they cannot get anything in the winter time to make the egg-shells. We eat the hens and their eggs, and make cake out of the eggs.

ALVIN CAMPBELL. *Second Year.*

THE CRAB.

The crab is an articulate, because it has a jointed skeleton. Its eyes are placed on two stalks, so it can see all around. Its eyes are compound. The crab has five pairs of legs. The front legs have a large pair of pincers that it uses to catch its prey with.

The crab walks sideways. There are several kinds of crabs. The land crab, hermit crab.

The crab sheds its shell every year. The shell splits open on the back, and sometimes the crab leaves some of its legs on the shell.

The female crab carries her eggs on her abdomen. If you touch the crabs, they will put their tails under them and walk off.

CORA FRAZEE. *Third Year.*

THE HOUSEKEEPER.

The frugal snail, with forecast of repose,
Carries his house with him where'er he goes;
Peeps out, and if there comes a shower of rain,
Retreats to his small domicile amain.

Touch but a tip of him, a horn, 't is well —
He curls up in his sanctuary shell.

Copied by MYRA ROBINSON. *Third Year.*

THE SNAIL.

The snail has a soft body, and lives in a shell. The snail lives in warm and damp places, such as by the walks of gardens and parks. They carry their shell on their back when they are out of it. When they want to go in the shell, they pull back their feelers, and their body will go in the shell again.

They eat most of the time in the night, and could spoil a whole garden in one night.

When cold weather draws near, they crawl under a log or stone, and go in their shell and cover the open places with a curtain.

This is made pretty thin, so that they can breathe.

AN OYSTER'S REFLECTIONS.

Two years ago I was a very small oyster. There were thousands of us, and we were no larger than particles of dust.

After we were hatched, mother thought it best to keep us in her shell until we were big enough to start out for ourselves. One day, out we all ran ; there were so many that we made the water yellow. Some of my brothers were carried away by the undercurrent, and some of them attached themselves to rocks, and I found this branch of a tree firmly imbedded in the sand.

One day some of my oyster friends closed their shells because they saw a boat above them.

Pretty soon an oyster-dredge was let down, and tore my brothers from their homes.

We oysters have many enemies, — lobsters and crabs will make a meal of us ; star-fishes like us, too.

JOHN E. CALHOUN. *Third Year.*

A LOBSTER'S ACCOUNT OF HIMSELF.

I would like to tell some of the land folks that my color is not as it is after being boiled. Such folks could not have lived on the seashore, and seen fishermen bringing in the lobster-pots with blackishing lobsters inside.

We lobsters don't look like our mother. We stay with our mother till we are about six inches long. If we get alarmed, we run under mother and hide. We change our shells in hot weather, and shed our old ones. New ones grow on, about one third bigger.

I have nineteen pairs of gills, and four pairs of legs, and a lot of teeth in my stomach.

Well, my dinner hour has come, and I will go and get some clams. I need not depend on my stomach teeth. I have teeth in my claws, too.

JOHN H. BOGART. *Third Year.*

A CRAB'S ACCOUNT OF HIMSELF.

We crabs wear our bones on the outside. It is the best way, because we do not get so many bumps and knocks.

I am afraid of getting hurt just now, for the other day I backed out of my shell. I am making a new dress, out of lime which I get from the seawater. We change our shells once a year.

I look very different from what I did when I was a baby. Wise men did not know what to call me, but thought I was a new kind of a water-animal.

When I get big enough, I shall stop changing my shell. You can hardly tell my head from my body. I have my shell to protect my body.

ALICE E. LINKFIELD. *Third Year*

THE FISH.

The fish's body is long and thin, and the tail is fan-shaped. It does not walk, because it has no feet. It gets along in the water by swimming. The fish's body is covered with scales, which are transparent. It feeds on worms, grubs, and other fish smaller than itself. Fishes breathe through gills, instead of lungs as we do. Fishes open and shut their mouths because water is all the time passing through it. The gills sift the air from the water.

It takes the water in through its mouth, and lets it out by its gills. Their scales overlap each other, and point toward the tail. The fish has six fins. The scales are nearly round, and the edge is scalloped. The fish's tail is shaped like a fan, so that it can use it like an oar. We call the fish a cold-blooded animal, because it feels the same way the water feels that it is put into. The fish's mouth is very large, and it has a small red tongue.

ETHEL HEATH. *Third Year.*

A fish is not like a crab, because it has a backbone and a crab has a jointed body. An oyster is not like a crab, because a crab's shell is jointed, and an oyster's shell has two parts.

A star-fish has no backbone like a fish, and no jointed body like a lobster's.

It is not like an oyster, because its parts come from the centre.

MARY WILLIAMS. *Third Year.*

OUTLINE OF ANIMAL LESSONS.

GRADE I.

Observe and describe familiar animals, selecting such as may be studied to advantage in the schoolroom. The cat, dog, rabbit, gopher, and squirrel are illustrations. Lessons on the cow and horse, given from pictures, should be supplemented by wisely directed observation outside the schoolroom. Use the cases prepared for studying live specimens. Study covering, parts of body, food, habits, and care of young. The feet and teeth should be observed carefully. Kindness to animals, and proper care of domestic animals, should be emphasized in these lessons. Give information which the observation of the children has made them ready to understand. Use stories of animals for Language Lessons when practicable. Try to lead the children to observe outside the schoolroom. Work for definite and correct expression, but do not emphasize the expression so far as to draw the attention from the thought.

GRADE II.

Study birds. Be sure in the observation that the attention is directed to the characteristics which belong to all birds. Note these characteristics as in the individuals studied, and so lead the pupils to the class idea. In selecting specimens, choose those which differ widely, as hen, duck, heron, owl, and robin. Study a nest, egg, feather, noting parts and arrangement of parts. In comparing birds, emphasize the structure of bill, legs, and wings.

GRADE III.

Fish, lobster or crayfish, oyster, clam, and starfish. Make simple lists for classification, noting simple resemblances and

differences. In these lists use familiar animals only. Compare different animals, telling in what they are like and in what different.

GRADE IV.

Build upon the preceding, and lead to classification of vertebrates into mammals, birds, amphibians, reptiles, and fishes. From chart, study man as a vertebrate. Group different orders, noting characteristics which mark the order, and make more definite study of one, as quadrupeds or birds. Hold to the principle, not to the fact of classification, and deduce the classification from the results of observation. Read to the pupils from "Animal Life in the Sea and on Land." Study plan of Morse's "First Book."

GRADE V.

Study crustaceans and insects as compared with vertebrates. Note the essential points of resemblance which determine their grouping. Divide insects according to the structure of wings. Study lobster from specimen, and compare with crayfish if possible. Note helps in Colton's "Zoölogy," and Morse's "First Book."

GRADE VI.

Study, in detail, oyster, clam, snail. Outline classes of the animal kingdom, using familiar types. Lead from observation of familiar animals to reading of others related to those studied. Distribution of animals.

In all work, lead to accurate observation, clear and definite thought and expression, a reverent spirit, and knowledge of essential facts and principles.

IV. LESSONS ON THE HUMAN BODY.

TEMPERANCE LESSONS.

So much has been written and spoken of late in regard to teaching physiology and hygiene in the schoolroom that it would seem idle to add any words to the list. Yet there are many schoolrooms where the work is not understood, and where the lessons prove failures because the teachers do not know the scope of the work, and the methods that should be employed. Probably there are few schools where the State law is not carried out to the letter. Doubtless there are very many schools where the law fails because it is fulfilled in letter only; still more, where well-meaning but ill-guided teachers waste time and opportunity in talking about alcohol and hygiene without adding a whit to either the knowledge or power of the pupils who listen to them, and perhaps repeat their words. The power to talk about bone, muscle, and sinew does not mean health; the knowledge that alcohol may destroy health does not always help to teach temperance. There must be more than that in our teaching. It is nowhere else more true than in these lessons that the spirit giveth life, the letter killeth.

Why are these lessons taught in our schools? What should be our purpose in giving them? Toward what end should every lesson tend?

"Why, we call them temperance lessons," a young teacher replies; "and they teach the children temperance."

"That means?"

"It means abstaining from the use of alcohol and tobacco."

Our young friend is not alone in her thinking, or rather, in her not thinking. Too many, if called upon to answer the question, might render an honest opinion after the same fashion. And because their ideas are so vague and their vision so narrow, their teaching must fail to accomplish the desired results.

Because the evils arising from the use of alcohol and tobacco are so great, the friends of temperance have endeavored to provide such instruction for the young as shall keep them from intemperate habits. Their hope must have been that children would turn from the temptation if they were shown the dire results that must follow the formation of such habits. But experience with human nature shows that one may have full knowledge of the probable results of a wrong course, and yet choose it deliberately, or slide into it through weakness, or be led into it through cowardice. A boy skates as near as he dares venture to the thin ice about an air-hole, not because he does not know that the ice is thin, the water cold, and the danger of drowning imminent; but because in the face of the knowledge he delights to take his chance of escape, and to enjoy the excitement of the experiment. How natural it is for us all, in watching another's course, to feel that we, in his place, could have avoided the quicksands and escaped the storms!

This knowledge of danger is not enough to prevent the formation of evil habits. The most it can do is to aid the judgment. But the boy must love the right, must hate the wrong, must have a constant purpose to

choose the right, even when the wrong seems pleasanter to his taste, and the strong will that is firm in trial, or his knowledge will not avail. The feelings must be cultivated, the will trained, the moral sense developed, to make the knowledge of use.

What should we aim to accomplish through these lessons, then? What do we mean by a temperance lesson?

If temperance implies self-control, obedience to law, right feeling, and clear knowledge, then any lesson which helps toward these results is so far a temperance lesson; and our temperance teaching is incomplete if we have omitted the means through which any or all of these results are reached. If knowledge is unaided by feeling, and the will is weak, the good fruits of the teaching will be few.

We should add to the list of temperance lessons such exercises as will develop self-control and teach obedience. It is easy to see that these need not be tabulated, nor given a place on the programme. Any exercise in which the pupils implicitly obey the teacher's command, even when it opposes their heart's desire, bears fruit in temperance, — is a temperance lesson. The bell rings as John Brown is making a "home run" in that game so dear to the hearts of American youth. If he turns his course at once toward the schoolroom, instead of waiting to touch the base, is he not strengthening a quality which may keep him from intemperance? John Jones waits for "another strike" after the bell. Which of the two, other things being equal, would stand firmer when tempted to smoke or to drink?

The teacher distributes colored crayons for the little ones to use, and tells the children not to lift them from

the desk until her word is spoken. The impatient little hands are folded until the restriction is removed, although the eyes look longingly at the new treasures. Is not the lesson taught as truly a temperance lesson as the one in which the children learn the number of bones in the human body? Need we feel that temperance teaching is omitted when such habits are developed?

In true temperance lessons the moral element bears an important part. The effect of alcohol upon nerve and muscle may be clearly shown, and abstinence be advised as a matter of expediency (however named), health being the reward of the denial and disease the penalty of the indulgence. Or the same lesson may be taught in such spirit that the children will recognize some of the sacred responsibility that rests upon them to keep their bodies pure and strong; will feel that they have no right to make themselves weak and helpless when they should be strong and helpful; will look with reverence upon the wonderful houses given them, and know that it is their privilege to keep them fit to be the "temples of God." There is no doubt that the second lesson is of greater worth than the first — is the true lesson we would teach. But only through the right spirit in the teacher can such lessons be given. Only as she appreciates the sacredness of the lesson can the children learn strength and purity and nobility from her teaching.

And here it may not be out of place to say that these lessons should not consist entirely of warnings against evil. Why not show the blessings that accompany right doing, as well as the penalties consequent upon wrong action? Why emphasize the bad instead of the good? Purity of thought and life are not best taught by dwell-

ing upon impurity. Why incite to strength by emphasizing weakness? It seems pitiful to open the eyes of children prematurely to the effects of evils they had never imagined, when the time might be spent in increasing their love for the good, which *must* help to keep them from evil.

Again, such lessons, to inspire the children as they should, need to be given at fitting seasons, rather than by rote. Nothing is more distasteful to a child than prating. Too early he begins to look for words which are uttered for effect, and not because the truth begs to be spoken. A ready-made lesson on moral subjects is known as such by the children. The word has to be spoken "in season" to bear fruit.

The newspaper reports an accident where many lives are lost through the negligence of a drunken switch-tender. There is an opportunity to impress the evil effects of drinking. Why should engineers be temperate men? Why should pilots? Why should we? At such a time the questions mean much, and a word will accomplish more than a sermon spoken when the time was not ripe.

Do not omit the lessons, then, but rather teach temperance with might and main. Let the lesson be such as will give clear, definite knowledge, — will lead to truer conceptions of right and wrong, greater love for purity and goodness, nobler purposes to direct, and stronger will to overcome. Fulfil the letter of the law, and give it life through the wise method and earnest spirit of your teaching.

REPORT OF LESSON ON THE HUMAN BODY, GIVEN TO FIRST-YEAR PUPILS.

Miss Hope has been asked to repeat for us all a lesson that she taught last month in her class work. So to-night we assemble in her schoolroom, instead of in the office, and watch her as she gathers her little class about her.

"I have liked Miss Hope's lessons on the human body," Miss Oldways is saying; "she has struck the keynote, I think." Miss Makepeace smiles a glad reply to her words: she is happy in her friend's praise. Miss Oldways meant to reassure "Little Hope," who evidently shrinks a little from the ordeal before her; and perhaps she meant to set us listening for the keynote. The young teacher reads only interest and good-will in our faces. She knows we are her friends, and straightway she forgets us in the lesson.

"You may show me your right hand, Jennie. Your left hand, Mark. Your right arm, Kate. Your left arms, class. George, point to your left elbow. Susie, point to your right elbow. Harry, you may bend your right wrist. Mark may bend his left wrist. You all may move the fingers of your right hands. Show me the palms of your left hands. Rap on your desks with your knuckles. Show me your index fingers; ring fingers; little fingers; middle fingers; thumbs."

The children point quickly to the parts named. The questions come so fast that their attention is fixed, and they show eager interest.

"You may show me how you can bend your fingers;

your wrists; your arms. Show me how you can move your separate fingers; your thumbs. Will somebody tell me what we call these bending-places?"

Mark answers readily, "We call them joints;" and adds further, "Here is a joint at my elbow that lets me bend my arm forward and back."

Miss Hope smiles her appreciation of the knowledge he has treasured, and calls upon other pupils to name other joints. Alice bends her wrist for the class to watch its movement. Susie twists her forearm, and George swings his arm to show the freedom which the shoulder joints allow.

"Let us see what we can make our hands and arms do," Miss Hope says to the eager class. They stand at her signal, and follow her through a series of graceful movements. The arms are stretched, relaxed, lifted, dropped, waved, swung, in rhythmic motion. All the joints are used, all the muscles called into exercise. The little people play upon the piano, they throw snow-balls, they lift heavy stones, they cradle the sleeping baby, they gather flowers, they sow wheat, they saw wood, they pick up chips, — all with a keen zest and eager entering upon the play proposed.

"While we rest," Miss Hope continues, "Alice may tell us of what use her hands and arms are to her."

"They help me to eat my dinner, to carry my books to school, and to button my cloak," enumerates Alice, looking back over her day's experience. "They help me to draw my sled up-hill, and to fasten on my skates," Mark adds. Jennie wants to say that her hands help to make music when she practises her lesson; and Kate volunteers that without her hands and arms she could not play ball. After nearly all the class have mentioned

some work of their hands, Miss Hope turns the direction of their thought by a gentle question: —

"Can our hands be of use to any one else, as well as to us?"

Little Jack cries eagerly, "My arms are of use to my father when I saw wood. I carry the wood in for my mother, too;" and the little lad straightens himself to look as tall as possible, in his consciousness of his power to serve.

"I am glad to think you can do that, Jack." Miss Hope speaks approvingly; and Jack's face wears a glad smile.

"I can rock the baby when mother is tired," Alice ventures timidly. "I get a pail of water every morning before I come to school," Mark declares, as if he finds difficulty in remembering any help he has given. "I set the table every morning," Jennie adds, and continues thoughtfully, "I might do more if I tried, I think."

"I am very glad to hear all this about our hands," Miss Hope is saying. "I think I should like to hear the words we learned about beautiful hands."

The little hands are folded, and the child-voices repeat together, —

> "Beautiful hands are those that do
> Work that is earnest and brave and true,
> Moment by moment, the long day through."

"And the other words we like," suggests Miss Hope.

"Whatsoever thy hand findeth to do, do it with thy might," chime the earnest voices.

"Who will tell me how we should care for our hands?"

There are many volunteers. Hope chooses little

Jack, whose eagerness has already brought him to his feet.

"We must wash them clean with soap and water, — lots of water, — just as often as they get black at all. And warm water is the best, if they are very black." "I know how you can keep them soft," Grace says, speaking for the first time. "You have to rub them with glycerine." "I remember about the nails, too," adds Jennie. "You told us how to take care of them, Miss Hope."

"You told us something else, Miss Hope." 'T is Mark's voice this time. "You told us about the 'clean hands and a pure heart,' for you said it was n't enough to be clean outside."

"What kind of hands do we want to have?" "Clean hands," the children answer.

"Can you think of any hands that we love very much; better than any other hands in the world?"

Alice is ready to answer. "I love my papa's hands. They are so strong. He lifts me way up into the air when he plays with me, when he comes home from work."

"What has made his arms so strong, Alice?"

"He says 't is working for us."

"That 's like the blacksmith, don't you know," Mark offers, eagerly. "'And the muscles of his brawny arms are strong as iron bands.' That 's because he 'swings his heavy sledge.'"

"Then what shall we do to make our hands strong?" asks the teacher.

"We must work," chime the voices again in chorus.

"And are there no other hands that we love?" pursues Miss Hope.

"My mother's hands," little Kate makes answer. "She strokes my hair with her hands, and it feels good."

Then follows an eager recital of the loving work of the mother-hands, ending with the decision that they are gentle because they are loving.

"Now we will think once again what we would choose for our hands," Miss Hope says, bringing the little wanderers back from their excursion.

"Clean, and strong, and gentle," Jack sums them up.

"What must we do to make them strong?"

"We must work."

"And to make them gentle?"

"We must be loving."

"Then when we go home let us look for some loving work for our hands to do," the young teacher says, as she dismisses the class, and smiles her good-night.

OUTLINE OF HEALTH LESSONS.

GRADE I.

Learn to name and locate parts of body, — head, neck, trunk, arms (right and left), hands, feet. Movement, use and care of each part. Show what can be done with each part. How adapted to use; right uses. Kindness, how shown by hands, feet, lips. Strong hands; lips that can say "no" when we are asked to do wrong. Teach the poem "Beautiful Things."

Compare parts of body with bodies of animals studied; compare uses. Parts of head, crown, back, sides, face, ears, nose, hair. Care of teeth, hair, ears, eyes, face. Parts of

hands and feet, uses; care of nails; joints, show how they allow freedom of movement. Give physical exercises related to lessons. Special attention to hygiene. Emphasize cleanliness and neatness.

GRADE II.

I. Simple lessons on eating, drinking, breathing, sleeping, with special reference to hygiene and right habits. Self-control, temperance in eating and drinking. Healthful foods and drinks. Value of sleep, hours of rising and retiring. Ventilation, colds, draughts.

II. Simple lessons on the senses, and what we learn through them. The skin, — use, care, cleanliness. In all lessons endeavor to teach self-control in relation to voluntary actions of the body.

III. The bony frame of the body: —

1. The skeleton.
2. Its uses. (*a*) To give shape. (*b*) To give support. (*c*) To give protection.
3. How bones may grow out of shape.
4. Effects of tight clothing and high-heeled boots and shoes.
5. Effects of unhealthy position of the body upon the bones.
6. How tobacco and alcohol affect the growth of the bones.

IV. How our bodies are moved: —

1. Muscles described.
2. Explain uses and shapes of muscles.
3. How they work.
4. The cords and their uses.
5. Effect of exercise on muscles. (*a*) Various kinds of exercise. (*b*) Best time to exercise.

GRADE III.

I. Review previous work.

II. 1. What we eat and drink: —

(*a*) The flesh-making foods.

(*b*) The heat-giving foods; what they are, why we eat them.

(*c*) Salty foods.
(*d*) Water, why we need it.
2. Unwholesome drinks.
3. Bad effects of tobacco.

III. How food is changed to bone, muscle, etc. : —
1. The kind of food to eat.
2. Why plain and simple food is best.
3. How unwholesome food may hurt us.
4. The best time to eat.
5. How alcohol hurts digestion.

IV. The blood : —
1. What it is and how it looks.
2. The tubes that carry the blood.
3. The heart as a busy pump.
4. Why we need exercise.
5. How exercise affects the circulation of the blood.
6. Effects of alcohol upon the blood-vessels and the heart.

V. Breathing and what comes of it : —
1. What is it to breathe.
2. How we breathe.
3. Changes in the air from breathing.
4. How bad air makes us ill.
5. Why pure air is important to sick people.
6. How to breathe pure air.
7. Effects of alcohol and tobacco upon the throat and lungs.

VI. How our body is covered : —
1. The skin.
2. The sweat-tubes, — the drain-pipes of the body.
3. Why we need to take baths.
4. Baths, how and when to take them.
5. Why we need to wear clothing.
6. About clothing.

VII. Hints for every-day health : —
1. How to care for the teeth.
2. Hints for keeping good eyesight.

3. Care of the ear.
4. Care of the throat.
5. Care of the finger-nails.
6. Care of the hair.
7. Care of the feet, head, and body to prevent colds.
8. Hints about sleeping.
9. The sick-room and how to care for it.

II.

LANGUAGE LESSONS.

I. PURPOSE AND PLAN.

THE language lesson has its place in every school programme of to-day. We have come to recognize the importance of teaching the child how to use his mother tongue, and through these language lessons are attempting to give him the power. But the lessons would be much more effectual if their aim was clearly apprehended, and the methods were adapted to this aim.

The very definition gives us the keynote of our language lessons, and furnishes us with the principle which should guide our work. "Language is any means of communicating ideas," says Webster. In the old grammars we read, "A word is the sign of an idea, and is either spoken or written." In the same pages we learn that a sentence is "the expression of a thought in words." All the definitions point to the same truth. A word exists only that it may embody an idea; a sentence only that it may express a thought. Language is simply the expression of thought. When words cease to signify ideas, and sentences to express thought, they are no part of language or language lessons.

The aim in language lessons should be simply the expression of thought. But the child must have the thought before he can express it. Lessons for thought-

getting, for the development of new ideas, must precede all forms of expression; otherwise the lessons will be simply word work, and the product of the lessons will be only words.

There must be in the primary course lessons whose object shall be to lead the child to new ideas, which he may make his own, incorporating into his language the words which express these ideas. These lessons, in which the child gains new ideas, or clearer conceptions of ideas which were dim before, may be geography, history, reading, or the science lessons. Nothing new can be taught to the child, no new idea can be given him to express, without increasing his language power; for he grows in power of expression as he has more thoughts which seek expression. Hence these lessons are the foundation language lessons, without which the drill upon expression *per se* is useless.

The various lessons for thought-getting will be outlined under the different subjects. In this chapter the lessons in expression or form-getting will be emphasized. The form of expression is determined largely by habit, and the habit is in turn determined at first by the ideal placed before the child. The boy says, "I ain't got no pencil," because this pattern has been set for him at home, and constant repetition has made it habitual. The right form is fixed in the same way in the language of the child of more favorable surroundings. This child says, "I have no pencil," with as much ease as the other displayed in his incorrect expression. The correct form of expression, whether it be pronunciation, inflection, or construction, is fixed by presenting the right ideal, and then occasioning the frequent repetition of the form to be learned. In no other way can the habit of correct

expression be formed. If the teacher is to present to the child the ideal of expression, it is essential that her own language should illustrate the qualities which she would teach. If her own association tends to fix in her speech incorrect forms of expression, she should make every effort to remedy the fault, and to accustom herself to the choicest language through reading the best books. Aim to present to your pupils the best example of English undefiled. Refrain from current expressions which attract because of their suggestiveness or absurdity, but which lower your standard of speech. The ideal which you present to your pupils should be the highest, not in the language lesson alone, but always.

No knowledge of rules will take the place of the constant practice in the use of good English. The power to speak correctly comes through use, as we have said, and not through memorizing rules of speech. This is constantly proven in the experience of our acquaintances. I have heard a girl, who could analyze and parse "Paradise Lost" to the entire satisfaction of her teacher, affirm that she did not like "them kind of sentences." Her language was not modified by memorizing rules. Her form of expression had been fixed in earlier years. Omit the rules from the primary work, and give instead example and practice, over and over again.

This practice may be given in connection with all lessons whenever an error is observed, but this is not enough. To offset the constant practice in wrong usage at home, there should be definite periods when the children give their attention to the correction of their habitual errors. Observe the language of the pupils, and make notes of habitual errors. For a week or a month

note all the incorrect expressions used by your pupils, and you will discover that they fall under a very few heads, if you attempt to classify them. The plural forms of nouns, the agreement of noun and verb, the case-forms of pronouns, and the tense-forms of irregular verbs will comprise them all. You will discover, moreover, that certain nouns, pronouns, and verbs are the staple stumbling-blocks. Set apart certain language periods for drill in these forms. Illustrations will be given later. Do not omit these lessons, but do not consider them the only class of language lessons to be given.

Another quality of expression to be desired is fluency. Ease of expression can only be gained by practice. The chief element is the desire to express thought. If the child has something to say, he will not be hindered nor hampered; say it he must and can. This is the great value of the thought-getting lessons as language lessons. They give the child thoughts which he desires to express; and the very desire gives fluency in expression. The frequent practice gives ease, because expression becomes familiar, and so "easy." We commonly express this same truth when we say that a thing is easy for us because we are used to it. Custom, use, practice, give ease. Ease in expression must come through repeated expression, — the opportunity of the language period.

It is not enough for language to be correct and fluent. It should be well chosen, the best expression of thought, and we may say, of the best thought. We cannot be satisfied to omit the æsthetic element from our work. Taste is cultivated, just as accuracy is taught, by familiarizing the pupil with the ideal. The ideal of expres-

sion is found in the best literature. Happy the teacher who loves the best, and who presents that ideal to her pupils.

II. WRITTEN WORK.

All expression of thought in words is language. In ordinary life oral language predominates over the written. So it should be in the language period. The oral expression should precede and prepare the way for written work. The child is hindered by attempting to write before he learns to talk; for writing involves all the difficulties of oral expression, with the added burden of spelling, punctuation, and manipulation of pen, ink, and paper. Freedom, ease, and accuracy of oral expression should be gained in large measure before the writing is attempted, and the steps in written work should be carefully graded. Many teachers make the mistake of asking their pupils to write, in the half hour of study, what could not be accomplished in a half-day by themselves. The result is what might be expected. Failure begets indifference, and the work is either not attempted, or it is most carelessly done. Fit the lesson to the capacity of the pupil. Make it so easy that he can accomplish it, and so hard that its accomplishment requires effort. Then see that it is done, and that the power to do grows with the constant practice which the lessons afford.

The purpose of the work in written language should be, as in oral language, to express thought. This purpose should never be lost sight of in the attempt to teach the necessary forms. It is easy to let this written work degenerate into writing declarative or interrogative

sentences, and lists of words having a certain plural form, with kindred exercises whose only object is to fix certain mechanical forms and usages. These forms must be learned by the child, but they should not appear to him the only end to be attained in his work. The expression of thought is the great purpose, and these forms are simply means leading toward clear and correct expression.

The teacher should remember, in all written work, that these forms and customs are arbitrary. They cannot be discovered through reason on the part of the child. The one and only way in which they can be taught is to show the pattern or ideal to the child, and then to lead him to observe how and where this pattern is used in expressions with which he is familiar. After the use of the form has been clearly discerned by the child, the next step is to fix this form in his mind through continued practice until it becomes a part of his habitual expression. First, aid him to see the ideal clearly; second, give him opportunity to imitate it in his practice.

The work becomes very simple as soon as the teacher has recognized the directness of the method, and has looked over the work to be done, in order to determine the order, or the steps, and the number of facts to be taught. These are, in reality, very few. We can almost count upon our fingers the rules for written expression that must be followed in ordinary practice. Our labor is confined to these few lines: the use of the marks of punctuation, the use of capitals, and the division of the subject into paragraphs, with the forms which are accepted in letter-writing.

The marks of punctuation present themselves in the

first written work which the child attempts. The first thought that he writes is expressed in a sentence, and the sentence, to be correctly written, should close with a period. From the day when sentence writing begins, the teacher should insist upon the use of the period at the close of every statement. She need not give the rule to the child in stated words, but she should call his attention to the period in her sentence which he copies, and should tell him that his own will be incomplete without it. If she continually demands the presence of this mark in all his written sentences, the use will become habitual, and the child will not need to be told in later years that this is a necessary part of his sentence.

During the first year of school the use of the interrogation point can be taught in the same way. Just as soon as the child is able to distinguish a question and its answer, he is able to place the interrogation point after his sentence. If this practice is insisted upon from the beginning, this point, too, will be easily taught, and the language lessons of every day will afford abundant opportunity for practice, through which the habit becomes fixed.

The use of the comma after direct address, and after words in a series, should follow in the second year. By this time the child will find in his reading books ample illustration of this use of the comma, and by careful questioning may be led to see under what circumstances this mark of punctuation is used. Holding fast to the habits already gained in the use of the period and interrogation point, the teacher will add to these, in the same way, this power to use the comma in its right place.

The next mark of punctuation, in natural order, is the apostrophe. In children's work this will appear first in contractions, and its use should be taught in connection with the spelling lesson. It will be easy to show that the apostrophe in "I'll" takes the place of the "wi," that the apostrophe in "can't" takes the place of "no." This the child will see for himself, if the teacher questions thoughtfully; and after he has grasped the new idea he should have repeated drill in finding words in which the apostrophe is so used, and showing what letters have been omitted in the contraction. This work may easily be done in the first half of the second year of school. In the second year the use of the apostrophe in possessives should be taught.

The teaching of this point involves more skill and care on the part of the teacher than does the previous work, because it demands more thought and knowledge on the part of the child. He must learn to distinguish the name of the owner, to select words which denote ownership, and learn the place of the apostrophe. Because the practice differs, or seems to differ, in the singular and plural, it is better to take one step at a time, and introduce the children to the singular possessive without attempting the plural. This use should be firmly fixed by constant and varied practice before exceptions are brought into the lessons.

The points remaining to be emphasized in punctuation, are the semicolon, dash, exclamation point, and quotation marks. It is doubtful whether children in the primary grades will become so proficient in writing as to need the semicolon to make their sentences clear. The use of the dash is so varied and indefinite that this, too, may be postponed to the time when grammatical

construction has been taught. The use of the exclamation point is easily impressed, but it should be limited in the early work to exclamations which demand the mark of astonishment. It is often used where the comma can well take its place.

For the third year of school we have left, then, simply the use of quotation marks to add to practice upon the points already learned. The manner in which these should be taught will be indicated in a lesson following this chapter. The order of work here, as with the apostrophe, should be carefully determined by the teacher. The points which she wishes the child to see should be carefully, clearly stated by herself as well as by the children. They should be led to discover the use of this mark of punctuation in their readers, and should have frequent drill in its use when writing. Dialogues afford a good opportunity for this practice, or stories into which some conversation enters. Care should be taken, however, to postpone the broken quotation until the pupil has gained facility in the use of the unbroken quotation.

The use of capitals is the second division of the written forms to be mastered by the pupil. The order of progress is like that outlined for the marks of punctuation. Many of the rules over which careful pupils have labored, and which they have attempted to apply in their compositions, after having broken them over and over again in their earlier writing, and so having fixed the habit of incorrect usage, — many of these forms may be easily taught by impressing the right pattern upon the mind of the child in the earlier lessons. Just as he learned to use the period at the close of every statement which he copied, so should

he accustom himself to the use of the capital letter at the beginning of every sentence. No sentence which is copied, written from dictation, or used in original work, should be accepted by the teacher unless it begins with a capital. If she persistently adheres to this plan of action, the first year in the school will fix the habit with the ordinary child, and nothing more need be said about it afterward. If this work has been omitted in the beginning, the same steps must be taken in later years; but they will be taken of necessity with greater labor and pains, because the wrong habit has become fixed in the interim.

The second step will be fixing the use of the capital in proper names. This does not involve teaching the pupil that a proper noun is the name of a person, place, or thing. It is enough to tell him, in the first sentence in which such nouns are used, that Harry's name should begin with a capital, or John's, or Kate's, or Mary's, as the case may be, and after repeated illustration he readily derives the fact, which is true to custom, that all names of people are written with a capital letter. The use of the capital in names of places will be taught in the same way, as occasion requires in the ordinary expression of the child.

Perhaps the most difficult point to be taught will be the use of the capital in direct quotations. This point should be met when the use of the quotation marks is fixed.

Third upon our list of written forms is the paragraph. Division of a subject into paragraphs depends entirely upon the division of the thought, and upon this alone. It should be taught whenever composition is taught, beginning with the earliest exercises in description and

narration. If the child has become accustomed in oral description to separate what he has to say into natural parts, arranged in the natural order, it will be an easy matter in the written expression to teach him to indent the beginning of each part; but it often happens that the teacher thinks of the paragraphs only when she comes to written expression, without having realized that the habit of systematic arrangement is that upon which this item of form will depend. When the child describes the plant as a whole, and then in its parts, a description of the whole would naturally make one paragraph, and description of parts another; or, if the description is full and complete, a paragraph may be given to each part. The systematic arrangement of the topics which determine the description will also determine the grouping of the thoughts which enter into the paragraphs. It is well for the teacher in the earlier writing to indicate an outline of topics which the child is to follow, impressing upon him that each one is to serve as the foundation for a paragraph; and she herself should remember that the paragraph exists simply to show these divisions which come through the regular arrangement of thought. She should emphasize this arrangement, and lead the child to criticise his own expression until he learns to see the relation of his thoughts, and the groups in which the sentences belong.

Lastly we come to the letter forms, which can be fixed only by presenting and emphasizing the facts which usage has sanctioned, and then affording occasion for repeated and varied practice. Because most people make use of their knowledge of written forms merely in letter-writing, having no other opportunity of expressing their thoughts in writing, this common form of

expression should be emphasized in every schoolroom; and because many children leave school before entering even the grammar grades, it is well that this practice should begin in the primary school.

There are three distinct steps in mastering the letter form. First, the child should see, attentively observe, and describe, the place appropriated to each part, — the heading, superscription, and address. Second, he should copy carefully the examples placed before him. After this step, and third, he should apply this knowledge by placing his own compositions in letter form. Simple descriptions of plant or animal or mineral, the story told in the morning or read in the reading-lesson, may be reproduced day after day in letter form. Notes to parents, schoolmates, or teachers, may be copied and dictated for the spelling lessons. The ingenious teacher will find manifold opportunities for making the child familiar with these forms in his every-day language lesson. They cannot be too early fixed in his mind.

The simplest and most direct forms should be used, — those which are in current use, and which the child will have frequent occasion to use for himself in his daily life. Other forms may safely be left to the period when rhetoric comes to his aid.

The test of the pupil's power to write in accordance with usage is best made through the dictation exercise. The use of the dictation exercise has been outlined in connection with the spelling lesson. The same plan should be observed in the language lesson.

It will readily be seen that all the work thus far outlined, in teaching the child to use the forms which custom has made necessary in writing, may be given in connection with language work, necessitated in the ex-

pression of the child's thought. The use of the capital, period, interrogation point, and quotation mark is to be fixed through the necessary repetition of the sentences which express the author's own thought, the reproduction of a story, the discussion of the day's work, the paraphrase of the memory gem, or the outcome of the science lesson. As in oral lessons, thought is first, expression second; and forms of expression are taught that they may fittingly embody thought.

The habits which are fixed with the written language work are as important as the knowledge gained, and they are taught in the same way. Every habit is fixed by thoughtful repetition. The habits of neatness, order of arrangement, accuracy, should be daily becoming stronger. If no careless work is received, if no untidy work is allowed, if the proper order is insisted upon day after day, week after week, month after month, the correct habits of work will be fixed; but the price that must be paid is thoughtful and patient persistence and unswerving adherence to the ideal which the teacher has placed before the child. Such results cannot be obtained in a day, nor a week, nor a month. They require the line upon line, and precept upon precept, and the faithful insistence every day upon the best results that the pupils can attain. Only *best* will insure better.

III. LESSONS FROM PICTURES.

The lessons from pictures are among the most helpful language lessons if they are properly taught. Unless the teacher has in mind a definite purpose, and definite means to achieve that purpose, the language lesson

becomes a mere talking exercise, aimless, vague, and profitless. Many lessons which are reported as being very enthusiastic and interesting belong to this class. The child is in no wise profited by the lesson, beyond the fact that he is interested during the period. If the teacher carefully chooses her subject, questions definitely, holds in mind the knowledge which the child should gain or the power which she would develop, the lesson becomes a help in language training. The picture serves to develop a subject, which suggests new thoughts to the pupil, and affords opportunity for the expression of the knowledge gained.

The purpose of a lesson from a picture should be to lead the child to observe, to think, and to express his thought. The lesson which results in observation, thought, and expression has the elements of a good lesson.

Observation should be accurate, — the child should tell just what he sees, not what he thinks he sees. It should be thoughtful, — he should come to recognize the meaning of what he sees. It should be well arranged, — centred about some chief object in the picture. It should be complete, — including all that may be seen in the picture. The expression of the child's thought should be accurate, — that is, truthful; it should be complete, not fragmentary. It should be well arranged. The teacher should so question the child and so direct his observation as to secure these ends.

The simplest picture lessons are those in which the child simply describes what he sees in the picture. This description should not be fragmentary. The child will tend to see isolated objects, and merely to state the fact that he sees these objects. "I see a boy." "I see

a horse." "I see a watering-trough." He has seen the picture as a collection of objects, not as one group which expresses a single thought. Lead him to see every object in the picture in its relation to a central figure. "I see a boy and a horse standing by a watering-trough. The horse is drinking from the trough, and the boy holds his halter that he may not get away. Not far off is the barn. The door is open, and I can see the stalls within. There are other horses in the barn, and I think the boy will lead this horse back and bring the others out to drink." Through such an exercise the child learns to see relations and to express them in separate sentences. The teacher should see that the child does the talking, that his answers are complete and well arranged. To this end, she should give the children an opportunity to repeat the entire description, first, in answer to questions in some definite order, and second, without any such help. In this way the child becomes independent and accustomed to complete expression. When he answers the isolated questions merely, the teacher often helps by look, inflection, or suggestion, and the child does little independent work. For older pupils the description may be written, the order being suggested by topics or questions upon the board. The habit of complete expression and a right arrangement is one of the most important results of such lessons.

The second way in which a picture may be used is as the basis of an imaginary story. The order of the work in such lessons is, first, observation; second, thought; third, imagination; and fourth, narration. In order to make the work definite and helpful, the teacher should carefully hold the children to certain subjects for discussion. They will tend to ramble as they travel through

the fields of imagination, and often will lead far from the subject originally suggested. She should keep in mind the frame for the lessons. In the picture which we have just described, for example, she may decide upon the one central figure, the boy, and determine to lead the children to imagine, first, his work; and from that his previous history. Her questions may be something like the following. After the children have seen and described what is in the picture, she says, "Let us name this boy." "We will call him Joe." "Let us imagine where he has lived, and what kind of life he has had. Where is he now? In the city or in the country? In the village or upon a farm? Who owns the farm? Is Joe Mr. Smith's son?" Some one suggests that Joe used to be a poor boy living in the city, and that Mr. Smith has taken him to help him on the farm. "How did Mr. Smith happen to be in the city?" "He went there to sell vegetables in the market." "What was Joe doing?" "Joe was blacking boots and selling papers in the street." "How did Mr. Smith happen to see him?" "Joe stood near the market, looked hungry; Mr. Smith gave him an apple, talked with him, liked him, asked him to go home and help him. Joe was glad to leave the street for the farm. He works hard, and is glad to work, is trusted by Mr. Smith, goes to school in winters, is growing to be an honest man."

If the pupils write this story or repeat it, they should be helped at first by topics or leading questions which will assist them in grouping their thoughts. The whole work of paragraph-making may be taught in this way. After the children have become accustomed to this kind of exercise, and have learned to write a complete story, they may be given different pictures and allowed to

write individual stories without help. Much valuable training may come out of these exercises.

The material for these lessons should be carefully selected. The picture should be large, that it may be easily seen by every pupil in the class. It should contain few objects, in order that the description may be centralized and complete. The picture is more pleasing to little children if colored. It may be made helpful in color lessons. The subject should be one in which the children would naturally be interested; not a landscape or a village, but a scene which represents life and action, — child-life if possible. It should suggest good thoughts, and be artistically good as possible. We have no time nor effort to give to placing before the children anything less than the best. Pictures of newsboys lounging about the lamp-post, half sick from smoking their first cigar, might be interesting to the pupils, but they are not inspiring. Choose, rather, a picture of a St. Bernard dog, supplied with his life-saving outfit, finding the half-buried traveller in the snow; or a picture of a little sunshine-maker tending the baby sister, that the tired mother may finish her work.

The new ideas in geography or reading may often be best taught by means of pictures. By all means make a collection to use in the schoolroom.

These pictures need not be expensive. In fact, the best collection may involve an expenditure of time and effort merely. Excellent illustrations for the geography, or history, or general lesson, are found in our illustrated papers. Advertisements of the various railways offer beautiful illustrations of natural scenery. Some of the advertising cards which are gratuitously

distributed by many firms may be made useful. These may be mounted upon stout manilla paper. Cut the paper in sheets of equal size, mount one card or picture only upon the sheet. Leave a wide margin. The picture stands out boldly from such a background, is more plainly seen by the pupils, and is more easily kept. A portfolio of pictures can be collected in a short time. They will be found helpful, again and again, in language lessons.

Many questions arise as the teacher attempts to lead her children to the description or story in the picture lesson. "Would you have the children always answer in complete sentences?" The aim will be to develop in the children the power of complete expression, but that is not the only aim, and often is not the immediate aim in the lesson. If the teacher wishes to lead the child to think, and succeeds in arousing his interest in the picture before him, she will often find it wise to leave a fragmentary or incorrect statement uncorrected for the time being. If the attention of the child is centred upon the form of his expression, it is withdrawn from the object which he is observing. In order to have an interesting and complete description, she must hold the attention to the central object; therefore it is frequently best to accept sentences which would be unsatisfactory as final, but which cannot be corrected at the time without marring interest in the lesson. At a later period she may give lessons whose object will be to correct the expressions used in the description. In these exercises she can hold the pupil to complete and correct expression.

"How soon would you use such pictures?" is a question which is often asked. They are very helpful in

the primary grades. They suggest subjects for conversation in the early lessons, when the child is becoming acquainted with the teacher. All children are interested in pictures. They love to look at them and ask about them; and the picture will prove a good starting-point for many of the early lessons in language or reading. They may often be used as the basis for the reading lessons. Their use should continue through the grammar grades, especially as a help in geography and general lessons, and as a foundation for written work.

The teacher should observe herself most carefully as she gives these lessons. Her manner and questioning will do much to determine the value of the lesson, and questions should be clear, definite, and direct. They should necessitate thought on the part of the children, and not put the words into their mouths, relieving them from all need of thought. They should be well shaped, and should be answered just as asked. "What did Johnny do?" should not be answered by, "He is going to the barn." Only one form of the verb could be used in answer to that question. See that the child hears just what the teacher asks, and answers just what she asks. The habit of attention and obedience thus acquired is invaluable.

Guard against repeating the answer of the child. The teacher often falls into that habit because she is not well prepared with her questions, and she unconsciously hopes to gain time. The habit may also come through the attempt to make all the class hear what one pupil has indistinctly said; but the pupils are thus relieved from all responsibility in making the others hear, and they will not speak clearly and distinctly unless they are required to do this work for themselves.

The tendency of the child will be to imitate the expression of those first called upon to recite. To prevent this, the teacher should distribute her questions carefully, varying them to suit the need of the children, and in accordance with the purpose of the lesson. If the aim is to help the children to right arrangement and complete expression, it will not matter that they all say and write the same thing. The object here is form-getting, and there is but one ideal of form. But if the teacher's object is to develop power of individual expression, the children should work with separate pictures, or write without the teacher's help.

A profitable exercise for the teacher herself is the writing of a description or story which she would require from the pupils. If she watches her own work, and discovers the difficulties that are in her own way, she will work more patiently with the children, and will also recognize more clearly the ideal which she should place before them.

IV. LESSONS ON WORD-FORM.

We have now come to recognize in our teaching that knowing a thing is not equivalent to doing it, and that knowing does not always result in doing; so the day is past when the study of rules of grammar is depended upon for fixing correct habits of speech. The child's forms of expression are fixed at home, — first, through the pattern which is set him by his father and mother and sisters and brothers, and second, by the constant repetition of this form. The habit of correct expression must be fixed in the same way. The teacher must

set the pattern for the children, and then occasion the use of the correct form. The following exercises illustrate the manner in which this can best be done.

EXERCISES IN FIXING CORRECT FORMS.

(To correct the use of two negatives, as, "I ain't got no pencil;" "I did n't have no time." Exercises given to primary grades.)

Teacher. — To-day I will play that I am borrowing. I will ask you to lend me something. Please lend me your knife.

Pupil. — I ain't got no knife.

"Johnny, please lend me your knife."

"I have n't got no knife."

"Katie, please lend me your knife."

"I have no knife."

"Katie's answer was right. I like the way in which she said it. Listen; I will ask her again. Katie, please lend me your knife. Johnny, please let me take your knife."

"I have no knife."

"Please let me take your watch. Please let me take your umbrella."

"I have no umbrella."

"Please lend me your pen."

"I have no pen."

"Will you give me an orange?"

"I have no orange."

"Let Katie take your book."

"I have no book."

The continuation of this exercise makes it necessary that every child use the correct form. The teacher should emphasize the correct form rather than the

incorrect, calling attention to the one who gives the right answer and not to the wrong one.

(To fix the correct form of the pronoun used in the nominative case.)

Teacher. — John and Peter may run across the room. John, tell me what you and Peter did.

Answer. — Me and Peter run across the room.

"Peter, tell me what you and John did."

"I and John ran across the room."

"The polite way is to name John before you name yourself. Now tell me again."

"John and I ran across the room."

"Now, John, Peter told me very nicely. Listen while he tells me again. Now you may answer the question, What did you and Peter do?"

"Peter and I ran across the room."

"Kate, in what class are you?"

"I am in the highest class."

"In what class is Mary?"

"Mary is in the highest class."

"Katie, tell me in what class you and Mary are."

"Mary and me are in the highest class."

"Do you remember how Peter told me who ran across the room? Peter, tell us again. Now, Kate, tell me who are in the highest class."

"Mary and I are in the highest class."

"Who lives on 10th Street? John, Jack, Mary? Mary, you may tell me what three children live on 10th Street."

"John, Jack, and I live on 10th Street."

"Susie and Belle may take these pencils."

"Susie, what girls have my pencils?"

"Belle and I have your pencils."

"Belle, what girls have my pencils?"

"Susie and I have your pencils."

This exercise will need to be repeated many times in the ordinary schoolroom, but the children never tire of the practice when varied as above suggested. The right form is emphasized, and the children are required to use it over and over again. This accomplishes much more than the repetition of a rule. The use of the right form becomes habitual only through practice. Written exercises in filling blanks may be assigned after the right ideal of the form is fixed in the minds of the children.

Irregular verb forms.

The mistakes which occur in the use of irregular verbs are always to be found in the use of the past tense and the perfect participles. There is no need of drilling upon all of the several forms. Centre all the attention upon those where the difficulty is found. Exercise: —

Teacher (writing upon the board). — Mary, what am I doing?

"You are writing upon the board."

"John, what did I do?"

"You wrote upon the board."

"Kate, what have I done?"

"You have written upon the board."

"Mary, tell Kate what I did upon the board."

"Miss A. wrote upon the board."

"Susie, tell Kate what I have done."

"Miss A. has written upon the board."

"John, I will give you my chalk. What did I do?"

"You gave me your chalk."

"Kate, what have I done?"

"You have given your chalk to John."

"Susie, what did I do."
"You gave your chalk to John."
"See this piece of paper. What am I doing?"
"You are tearing the paper."
"What did I do?"
"You tore the paper."
"What have I done?"
"You have torn the paper."
"Mary, tell Kate what I did."
"Miss A. tore the paper."
"Kate, tell Susie what I have done."
"Miss A. has torn the paper."
"See the crayon. What am I doing?"
"You are breaking the crayon."
"What did I do?"
"You broke the crayon."
"What have I done?"
"You have broken the crayon."
"Tell John what I have done."
"Miss A. has broken the crayon."
"Tell John what I did."
"Miss A. broke the crayon."

In the above exercises the teacher must insist upon close attention to the form of her question, and exact answers. After a few such lessons, the children will become accustomed to the correct form and will observe its use in the class, and then it will be possible to call the attention of the pupil, by word or sign, to his use of the incorrect form, and such a correction will not interrupt the current of the lesson. After these exercises have been given, the teacher may insist upon the correct use in all the exercises of the day. Frequently the pupils become critics, and report any departure from the new ideal that has been presented

to them. In selecting forms for drill, choose those that have been used incorrectly. Drill upon one until that form is fixed before attempting another.

V. POEMS AND STORIES AS LANGUAGE LESSONS.

The lessons which provide material for language lessons, as far as thought-getting is concerned, are in two classes, — those in which the material is gained through observation on the part of the child, and others in which the child gets his needed thought through listening to the teacher's story or through reading for himself. Among the many subjects which might well be chosen for the language lessons, the writer has come to select two chief sources, — science, and literature, including history. The work which the child does in observation is incomplete unless it is re-enforced and interpreted by the observation of others; and this re-enforcement must come through reading. Again, the observation helps the child to interpret what he reads, and makes the poem or story more clear than if he himself had not been open-eyed to his own surroundings. If the general lessons are chosen in these two lines, the language lessons will naturally be associated with them, and the work in each line will supplement that of the other. In considering the language lesson as such, we must remember that its purpose is both thought and expression. Through the study of the poem or story the child will obtain new material for expression. His horizon is widened by going beyond that which he

himself has seen, by reaching out into the new fields which his observation has enabled him to discover. In thinking of the observation lesson isolated from such reading or study, we are reminded of Sam Weller's reply to the inquiry as to whether he had seen a certain important event in which Mr. Pickwick was interested. His words were, "Having only eyes, my wision is limited." The child's vision is limited, if he has not been taught to see with the mind's eye, to use his imagination, and to translate the new through his knowledge of the old; so the story, the poem, and the fable should be brought into the schoolroom, introduced into the language class as well as into the reading, and used to supplement and complete the science lessons.

If the child is to gain thought which becomes his own, and is to express it afterward, this thought should be in every case worth the getting, — something that will not only add to his knowledge, but which will accustom him to the beautiful in thought and expression, and so will inspire him to follow higher ideals. All the stories or poems selected for repetition in the schoolroom should be the best which the child is capable of hearing and appreciating. We make a mistake when we read down to the children, — when we imagine that all truth must be diluted before they can hear it or attempt to assimilate it. The child is by nature a poet; he appreciates what is most beautiful in poetry; he will prefer the poem to the jingle, will unconsciously select that which is best; and the expressions which he cannot understand remain with him in his memory, recurring again and again as some association recalls them, until his later experience enables him to interpret their mean ing, and they come with new fulness of truth or beauty in

his time of need. But the period of his childhood is the period in which he should become familiar with beauty of thought and expression; not through analysis,—that time is not yet,—but through simple absorption of the ideas presented to him in the rhythmic poem or story. There is no other period when he takes so strong and eager hold upon such things. He absorbs now what he will interpret hereafter; and he should be made familiar with the good, in order that when he comes to the time of choice, with the power of reading to serve as a key to unlock the door of the treasure house, he shall know the gold from the dross, and will choose that which is of eternal worth.

In his beautiful preface to "Child Life in Prose," Whittier wrote, "The child is always something of a poet. If he cannot analyze with Wordsworth and Tennyson the emotions which expand his being, within his fulness of life blest above the birds and flowers, he finds with them all nature plastic to his mind and eye. Not irreverently has Jean Paul said, 'I love God and little children; ye stand nearest to him, ye little ones.'

"I very well remember how at an early age the solemn organ roll of Gray's 'Elegy' and the lyric sweep of Cowper's 'Lament for the Royal George,' moved and fascinated me with a sense of power felt rather than understood. 'A spirit passed before my face, but the form thereof was not observed.' Every day, with unguessed meanings, these poems spoke to me, in an unknown tongue indeed, but like the wind in the pines or the waves on the beach, awakening faint echoes and responses, and vaguely prophesying of wonders yet to be revealed.

"John Woolman tells us that when a small child he

read from that sacred prose poem, the book of Revelation, which has so perplexed critics and commentators, these words: 'He showed me the river of the water of life, clear as crystal, proceeding out of the throne of God and of the Lamb;' and that his mind was drawn thereby to seek after that wonderful purity; and the place where he sat and the sweetness of that child yearning remained still fresh in his memory in after life. The spirit of that mystical anthem which Milton speaks of as a 'seven-fold chorus of hallelujahs and harping symphonies,' hidden so often from wise and prudent students of the letter, was felt, if not comprehended, by the simple heart of a child."

The truth which Whittier has so emphasized has been illustrated over and again in our primary schoolrooms. We have seen children drinking in the story of "Hiawatha" or Whittier's "Snowbound," or reciting with joyful voices Tennyson's "Song of the Brook," or singing still more sweetly his "Sweet and Low, Wind of the Western Sea." We remember a class of first-grade pupils who could recite pages of "Hiawatha," and whose chief delight was to play it, taking the part of the pines and fir-trees and the animals in the forest, of Nokomis and Hiawatha, and even representing the wigwam. Their eyes kindled as they recited the beautiful words, and their lives were beautified and made happier by the thoughts and pictures which had entered into them through their study of the poem. Children whose home life was narrowed and dwarfed, whose opportunities were meagre, whose surroundings were rough and poor, entered into the spirit of the poem with the same eagerness as did the children of more favored homes. A class of Bohemians and Italians in a primary grade in

Minneapolis learned nearly all of Whittier's "Snow-bound," and begged to be allowed to continue their study when the time came for changing the course of the recitations. A class of little Scandinavian children, to whom had been read Longfellow's beautiful poem, "My Lost Youth," turned in troubled disappointment to the teacher as she closed her book at the third stanza, saying, "That is all you can understand." "Do read it to us even if we do not understand," they pleaded, touched and held by the rhythm of the poem and the beauty of expression, which they felt even if they did not comprehend. How much better to read these poems to the children, to give them such food for their imagination, to fill their lives with such pictures and such ideals, to bring them into fellowship with the good and the true and the beautiful, — how much better than to measure out to them page after page of words which express the diluted thoughts of the ordinary reader, or to tell them the stories gathered at random from the child's story book or the teacher's memory.

Out of such teaching should come greater power to imagine pure and beautiful pictures, the ideals of what is strong and noble and true, as history has shown us these virtues, and a love for the beautiful, — strong enough to lead the child away from the slough of trash which is waiting to swallow him up.

The stories chosen for the language lesson should be fables or parables, teaching truth in the form which the children love so well, or anecdotes embodying the truth in heroic form. Much as children love the marvellous, and delight to hear the animal speak, or see the brave invariably winning renown and the beautiful invariably inheriting riches and bliss, they are still more entranced

by the stories of real life, — the true stories for which they plead, and for whose repetition they constantly urge.

The teacher will find numerous sources upon which she can draw for her stories, but she will find nō one book or paper which will contain sufficient material suitable for her class, nor would it be best if she could. The story which will teach the child most is the one which she herself loves and appreciates, which she remembers because she has loved and appreciated it. The best poets should be read, the best books should be studied, myths and fables and traditions should yield their treasures, and history should pledge its heroes to the teachers of little children. All that is best in her life affects the life of the children; that which is most truly hers affects them most. No story which she reads from the book to her class will have the power or charm of the story that she tells because she has loved it — has sympathized with the truth which it expresses, or has been inspired by its ideal.

Teachers should become good story-tellers, — should know how to present the point of a story, how to dress it and give it its fittest setting; they should come to the children with no barrier of book or paper between them and their class, but should give out the story from the reservoir of their own experience, warm and glowing with the warmth of their own appreciation and enjoyment. Then the story will touch the heart of the child, and become a part of his experience too.

The stories should be short and pointed. If the object of the lesson is to teach the child to repeat them, giving him power in narration, they should be short enough to be told, remembered, and repeated in one

lesson. For little children, short fables and anecdotes should be chosen. They should be repeated by the teacher until they have been absorbed by the child, and then they should be told over and over again by the children. In this repetition the teacher should insist upon a definite order of telling, a complete and concise narration. The child need not necessarily reproduce the exact words of the teacher, but he should reproduce the meaning, — should learn to tell the tale as it was told to him, to repeat it faithfully. He should tell it concisely, stopping when he is done, driving the nail home. His practice in story-telling teaches the child to arrange the parts of the story in the natural order, develops ease and fluency of expression, and, — nor is this the least important result, — aids him to become more ready and easy in conversation.

Often it is well for the teacher to read entire books or stories of some length to the children, in order thus to interest them in the right type of literature. It is well to set aside a period on the programme for such reading. The children will show a marvellous power to retain and repeat the story. We have seen twelve pages of manuscript which a child in a primary third grade wrote after hearing the story of the Conquest of Mexico; and his manuscript was nearly equalled by all the other children in the grade. Another class of children were ready to tell the story of "Little Lord Fauntleroy" from the beginning to the end, even repeating accurately dialogues occurring in the story. No exercise gives the child greater enjoyment than does this story-telling; and if it is wisely conducted, no exercise is more profitable.

The poem should be handled delicately in the lan-

guage lesson. It is a spiritual thing. It should be taught only by some one who is thoroughly in sympathy with it, who loves the poem, and desires to teach it; nor should it be dissected too roughly. The poem should be chosen because the teacher enjoys it, as well as with the thought of adapting it to the children. It should be in line with the subject studied, fastened to some story of noble deeds, or to some study of wayside flowers, or to the signs of the passing season. Often the poem should be read and re-read without comment, until the children have imbibed something of its spirit, and until they question its meaning. Again, it should be presented to them as a picture, as in some of the studies that follow this chapter. In other cases the words should be studied until they become clear channels for passage of the thought, clear windows through which the child looks out upon new landscapes. The poem should be read as a whole before any such study; and all the study of the words should be considered as an attempt to throw side lights upon the picture as a whole, that the children may see it more clearly, and so the better appreciate it.

The story of the life of the author, as far as the children may enjoy it, should come after the study of the poems, and not before. Their only need of knowing the author is because they have heard his message, and so his life becomes of value to theirs. Teach the poem first; tell of the author afterward.

This study of poems should include also the memory gem, the jewels set in few and fitting words which can be learned in the odd minutes of the day, and repeated over and over again in the fragments of time. Some memory gem should be always upon the board in every

schoolroom. If the children cannot read it, still let it appear for the service it may do the teacher. It helps to give the thought wings, and to lift the ideal out of the treadmill which the routine of the school may so easily become. Some teachers open their school with the repetition of the memory gems which the children have learned; others close the day's work with the same exercise. "I like to begin the day well," says the one teacher. "I like to send the children home with a good thought in their minds," rejoins the other. Both are right. The writer remembers a silver-haired old man whose eyes glowed and whose face was illumined as he repeated long extracts from Goldsmith's "Deserted Village" or from Pope's "Essay on Man," which he had committed to memory as a boy in school. Over and over again the pictures which the poet paints so well had gladdened his thought; over and over again his mind was carried back to the happy days of childhood when he learned his lesson. Who can tell how many times the poet's picture had comforted and inspired him? To many a life the strong words of the Psalms come back in the same way with healing and inspiration at times of deepest need, when no other help is near. These seeds have been sowed in childhood, to bear fruit a hundred-fold in maturer life. We cannot spare these lessons from our schoolroom. There must be time for the story, the poem, and the memory gem.

III.

READING.

I. AIM.

"HOW shall reading be taught?" and, "What are the aims in teaching reading?" are questions which should be answered by every teacher who attempts to teach a child to read. The second question should be first, for the aims in teaching reading will largely determine the method. A clear understanding of the "why" definitely shapes the "how." The teacher's comprehension of the purpose of her work causes every lesson to trend in harmony with that purpose.

Let us look for the purpose in teaching reading. To that end let us inquire what reading is.

I read a letter from my sister, telling me of her stay in Rome and the new scenes she is looking upon. What do I get from the letter? My sister's thought about Rome. I read in the paper the account of Lieutenant Peary's expedition through the frozen zone, and I get new thoughts of the life in Greenland. Through my reading I am getting thought. Reading is thought-getting. We *read* when we get the thought expressed in the printed or written page.

But that is not all. Nothing is really ours until we have shared it. Our conception of reading is not complete until we have added to our thought-getting the thought-giving. The first is silent reading only, the

second is known as oral reading. It goes without saying that the power to give the thought depends upon the power to *get* the thought.

Having decided upon the meaning of the work, let us be guided by it in shaping our teaching. If reading is getting and giving thought, a child reads only when he gets, or gets and gives, the thought expressed in the printed page. No naming of words, or repetition of sentences will count as reading unless the child masters, and so possesses, the thought expressed by these words.

What does such reading involve? Let us see, — and in no clearer way can we see than by putting ourselves in the place of the children. Let us read a stanza: —

> "The curfew tolls the knell of parting day,
> The lowing herd winds slowly o'er the lea,
> The plowman homeward plods his weary way,
> And leaves the world to darkness and to me."

Do you get the poet's thought? Do you see the picture which he sees? Some one says frankly, "I am not quite sure. I have read the stanza a great many times, but I do not know who the curfew is." Evidently he thinks the curfew is a man — the sexton, probably, who tolls the bell. Another explains the meaning of the word, — tells how it originated in the custom ordered by William the Norman, when England obeyed his word, and the peasants covered the fire at night at the sound of the curfew (*couvre feu* — cover fire) bell. So the sunset bell comes to be called the curfew. Yes, number one reads the line now, and sees why the curfew seems to toll the knell of the dying day. He could not get the thought before, because he did not know the meaning of the word. One element

involved in this thought-getting, then, is knowledge of the meaning of the words used.

Further, it is necessary that the reader should know the form of the words read. He must recognize every word as representing some idea, and separate it from every other word expressing other ideas. Unconsciously, but nevertheless surely, we compare every word we see with the form of the word which we carry in our minds. This word is "the," and no other; the next is "curfew," and no other. Knowledge of the form of the word is essential to thought-getting. And if the thought is to be expressed to others, the knowledge of the sound of the word is also essential. As to the words, then, reading involves knowledge of their meaning, form, and sound, and the perception of the form must instantly suggest the meaning and sound, so close is the association of the three.

Reading as thought-getting must therefore be preceded by lessons which prepare for reading. The child must be taught the meaning, form, and sound of words before he can read sentences made up of words expressing thoughts. To keep before the child's mind in his reading, the purpose of thought-getting, the teacher herself should recognize and clearly hold this purpose. The study of words should not be named reading, but simply word-study. The thought, which is the life-spirit of the sentence, should be chiefly emphasized in the reading lesson, and all barriers to the thought-getting should be removed in the preparatory lessons. Since ignorance of the sound, the form, or the meaning of words would be a barrier, much attention must be given in the preparatory lessons to removing these obstacles.

There is but one way in which the child can learn the meaning of new words, — the object, or quality, or action, or relation must be perceived through the senses. All new ideas — better, all primary ideas — are so obtained. If the word "orange" is to be presented to a child who has never seen one, the orange itself must explain the meaning of the word. A good picture is a partial substitute; a vivid description is next best. It pictures the unknown in terms of resemblance to what is already known.

The teacher needs to distinguish between words that represent ideas entirely new to the child and those already familiar, and to supply herself with material for illustrating the new word. For this purpose, in primary classes, objects should be obtained when possible. A collection of pictures is invaluable. The power to describe well is also indispensable. The new idea must be added to the child's experience, and with it the word which embodies it. Without the idea the word is valueless, and only through the appropriate sense can this idea be gained. This truth is especially and prominently applied in the first-grade classes, but it is equally true of all grades. The difference in extent of application is due only to the fact that the older pupils have already largely acquired the ideas expressed in the vocabulary met in their reading. This process of acquiring ideas must occupy much of the time of the early lessons in learning to read.

Having possession of the idea, — which is, we may say, the spirit of the word, — the child must become familiar with the form and sound which embody it. To this end the child is helped by all exercises which demand attention to form and sound. His power to

recognize and name different words depends upon his power to see resemblances and differences between forms. He must learn to observe forms attentively. Everything that helps him to recognize different forms, or to group those which are alike, will help him to this power of recognizing and remembering words. This truth should be remembered in planning busy-work, so called.

The child will observe most attentively that in which he is most interested. If he is thoroughly interested in the object whose name he is to learn, he will attend to that name. The name should be presented and the association fixed when the child's interest in the object, picture, or description is fully awakened. Much of the monotonous drill upon word forms would be obviated through remembering and applying this simple principle.

After the word has been thus presented, it must be repeated over and over again; that is, occasions for its use must be presented to the child. That is very different from repeating without any reasonable occasion, simply because the teacher so directs. If the child, *of necessity*, uses the new word in written and oral statements, — copies it in various relations, finds it among others, illustrates it by drawing, — it becomes his own, a part of himself, a part which he has found necessary to the expression of his thought. Such repetition or drill fixes the form in the child's mind. Without such repetition, however vivid the first image of the word, it fades away, an unused and useless thing. It is use only which entitles us to hold our possessions.

The child might learn an infinite number of words through such presentation of the meaning and form,

and yet be comparatively helpless in considering a new form, so varied are the form fashions of our English words. To enable him to help himself, he should associate the sound with the form, learn to resolve a word into its sound elements, and to recognize a new form through its likeness to those already familiar. Knowledge of the phonic values of the letters gives the child command over classes of words whose type he has learned to recognize, and thus renders him independent of the teacher in naming new words, or in recognizing the new form of words expressing familiar ideas. A part of the time allotted to word-study should then be given to drill in phonics, to the end that the child may become self-helpful in his reading. Further, this study of sounds leads to attention to sound, clear articulation, and distinct speech. Lessons in phonics will be outlined in the following pages.

So much for word-study, which must prepare the way for reading. Now for the reading itself, which is thought-getting.

Thoughts are expressed in sentences. The child should always read sentences, and read them for the thought which is in them, since reading is thought-getting. Should we not consider from the beginning the kind of thought the child gets? We learn to read that we may have the power to read the thoughts of others. At the same time that we teach a child to read, we should teach him to love and desire that which is good to read. His power to read should be a gate opening into fair, fruitful fields, not into treacherous and poisonous swamps. So great is the good, or so fearful the evil, that may come to a child through his added power, it behooves us to spare no pains to

make this power work for righteousness, truth, and beauty.

What thoughts should the child get? Only those worth the getting, — the high, the noble, the beautiful, the pure. That is, after all, the purpose in our learning to read. We might better never read if these fields were not open to us, and we used our power in learning of evil. And this purpose should dominate the teacher from the very beginning, should guide her in choosing even the first sentences which she places upon the board for the child.

Now that script is so universally used in teaching beginners to read, the subject-matter of the first sentences can be shaped at the teacher's will. The thought that determines our best school readers is in the same line, and as soon as the first steps in reading have been taken, the whole field of good literature is open to the young reader. How vital the need that from the beginning he be taught to consider language the vehicle of the best thoughts, so that he may turn at once to the best when left to his own choice.

Let the teacher of little children, then, aim to make reading always the getting of good thoughts, — thoughts in themselves beautiful and uplifting. Choose the best for the child to read, and early teach him to recognize this purpose in his reading.

We have spoken of our lessons which prepare the way for reading, but we have only partially prepared when we have worked with words. The reading of a poem or story depends upon power to see and to remember, to feel and to imagine. One who reads well possesses these powers in a marked degree. Our reading lessons must be so conducted as to develop these

powers, and many another lesson, must help to this end. Read Whittier's "Barefoot Boy," and observe the working of your own mind as you read. Do you travel hand in hand with the Barefoot Boy through wood and fields? Do you see the "sand-rimmed pickerel-pond, and the walnut slopes beyond"? Are you sure "where the oriole's nest is hung, and how the robin feeds her young"? Your power to read this depends, first, upon your having had, at sometime in your life, experiences akin to those of the Barefoot Boy. The more you have seen in brook and field and wood, the more you will read in the poem. The more you have loved the free country life, the better will you enter into the feeling of the poet, and share the experience of the boy. You paint the pictures which the poet describes for you, but you must get the colors from your own experience. You imagine the scenes because there has been something like them in your life. Can you imagine a boy who has always lived in a back alley, reading that poem? How can he imagine fresh fields and clear waters, having known only dark walls and unwholesome gutters? Before he can be taught to read, he must broaden his experience. His horizon must take in the woods and fields, and he must share their happiness.

We cannot do all this for all children; but we can remember that the child gets out of the sentence only such thought as he is able to experience, and then our teaching of reading will not stop with words. All lessons which awaken new ideas and thoughts, all lessons which guide the imagination to new fields, all lessons which cultivate the feelings and enable the children to put themselves in the place of another, all such lessons are preparatory to good reading. They

help the child to interpret the printed page, to share the thoughts and experiences of others. The nature study brings the child into sympathy with the world of nature, furnishing him with ideas which are recalled by poem or story. The description of heroic deeds kindles the young imagination, and the child pictures himself, too, as a hero. How can one read of noble deeds if he has not experienced noble impulses? How can one imagine or express pity if he has never felt it? The reading presupposes living. All lessons which help the child to broader knowledge and to clearer interpretation of life are actual helps to good reading. The true reading lesson does not stop with word-naming, but rather tends to strengthen all the powers of the child and to widen his experience.

II. PREPARATORY LESSONS.

In the first grades, time is lost by beginning too early to read, before the child has taken the preparatory steps. It is essential that the teacher should have some definite idea of the range of the child's thought. She should learn what he knows in various directions, where he has lived, what his home surroundings are, with what classes of objects he is best acquainted, how far he has observed these objects. She must inspire in him such confidence in himself and her as shall lead to free expression of what he knows. If an essential to reading is knowledge of the meaning of words, these preparatory conversations must show the teacher what meanings are foreign to the child's experience. If he is to express the thought

which he gets through reading, he must first be accustomed to oral expression. The need of these first lessons is greatest when children have limited opportunities at home, are shy and timid in expression, or are hindered through associating with those who speak another language. With such children, a month's lessons in language, in expressing freely their own thoughts, should precede any attempt to study the written word-forms. And in all classes in primary grades, these conversation lessons should accompany the reading, to develop in the children the habit of free expression, to show the teacher the extent of their ideas, and to afford the opportunity of adding new ideas. A conversation about life on the sea should prepare the way for reading of the wreck of the "Hesperus," for example. Skipper, deck, waves, lighthouse, beach, seaweed, are unknown quantities to children who have never seen the sea. A talk which shows the teacher where the child's knowledge ends, and which gives him the pictures of the life which the poem describes, is indispensable to the right reading of the lesson. So with stories of travel or tales from history. The lessons which serve to interpret the pages of the reading lesson are of first moment. In such lessons the teacher needs the quick insight which will enable her to recognize at once the limit of the child's knowledge and the line where she needs to give information or otherwise present the new ideas. The exercise should not degenerate into prattle about what the children already know, nor should the teacher be the only one to express her thoughts. Guard against aimless lessons. Know before the conversation begins just what you aim to do, and then do it.

III. HOW TO GET EXPRESSION.

"How shall I get expression in reading?" is a question often asked. The means attempted are many. "Read as you would talk," the teacher says, forgetting that the child talks ordinarily with teeth close together and no visible opening between the lips. "Let your voice fall at a period," commands another, and straightway the lesson becomes to the child a search for periods and an effort to remember the rule. The solution of the problem will never be reached in these ways.

What do you desire? Expression, — expression of thought. The child is to give you the thought which he finds hidden in the sentence. What first? He must get it. What next? He must desire to give it, and realize that he is giving it. He should do this as naturally as he would toss a ball to you. You must question as naturally as if asking him to toss the ball. But keep your mind and his on the ball, the thought. Avoid doing anything to direct the attention of the child away from the thought, to his inflection, his pronunciation, his attitude, his manner. Hold to the thought now and take another time for these items, when they can be first. It matters little whether the lesson is in first grade or eighth, the fashion of it is the same. Little Kate reads word by word the sentence, "Mary wore her new brown dress to school yesterday." Her voice is low and timid because she is not sure of her power. "Read again, Kate; tell me what Mary wore to school yesterday." "Yes, and now tell me where she wore her new dress. And now tell me when she wore it. Perhaps Mary

has two new dresses. Tell me which one she wore to school." By this time Kate has forgotten to be shy, and she has a message to deliver in answer to your questions. "Now tell Jennie what Mary wore yesterday. Tell Paul. Tell me again." If instead, the teacher should say, "Emphasize brown, or yesterday, or new," or "Make these words strong," the child thinks of the words and emphasis, not the thought. And she does less thinking, by far, than when questioned as above. The more she thinks, the better her *expression* will be, because she has more thought to express. The words now represent ideas to her.

John, in the higher class, is reading "Paul Revere's Ride": —

> "A hurry of troops in the village street,
> A shape in the moonlight, a bulk in the dark,
> And beneath, from the pebbles in passing, a spark
> Struck out by a steed flying fearless and fleet —
> That was all, — and yet, through the gloom and the light,
> The fate of a nation was riding that night,
> And the spark struck out by that steed in his flight,
> Kindled the land into flame with its heat."

How can we help John to read this with expression? By enabling him to see the picture he describes, to take the place of the brave rider, to live again through the stirring events of those Revolutionary days, to feel the pride and courage of the hour. Stir his imagination. Forget the school walls, the familiar desks, and ride in the dark through the village street on your momentous errand. And John will ride too.

Then would you do nothing with breathing exercises or vocal drill, nor ever show a pupil how to hold his book? Yes, if John's enthusiastic rendering is hindered

by the habitual tension of his organs of speech, give special exercises that will lead to freedom of these organs. Short sentences may be sung through the different tones of the scale. Familiar sentences may be used for practice in slow or rapid reading, cheerful or sad tones. Lists of words involving the troublesome sounds may be pronounced again and again, clearly, slowly, rapidly. But these exercises should be given at a time separate from the reading lesson, if possible. In the reading, emphasize *reading*.

IV. SUGGESTIVE HINTS.

Much time should be given the pupil for silent reading, when he gets the thought for himself without the aid of teacher or classmate. The need of the lesson is twofold: the teacher must test the child's power to get the thought alone, and the child must learn how to study. A most helpful exercise is that in which the teacher questions the class upon the lesson studied, so as to necessitate silent reading before the replying. Her questions should be clear, definite, searching, leading to clear and definite thought on the part of the child. Such questions will lead him to recognize each sentence as having a message to deliver to him.

"By the shining Big Sea Water,
Stood the wigwam of Nokomis,
Dark behind it rose the forest,
Rose the black and gloomy pine-trees,
Rose the firs with cones upon them;
Bright before it beat the water,
Beat the clear and sunny water,
Beat the shining Big Sea Water."

"What are we reading about?" "The wigwam of Nokomis." "What do we learn about the wigwam?" "It stood by the shining Big Sea Water." "Can you see this Big Sea Water? How does it appear?" "Shining." "Why?" "The sun shines upon it." "How do you know?" "It is called the Sunny Water." "Can you see across it? How far does it reach?" "Is it quiet?" "No; it beats against the shore." "Before the wigwam is brightness. Do you see anything else?" Darkness behind it." "What makes it seem dark?" "Dark pine-trees and firs." "Are they large or small as you see them? What is the shape of the firs? What do you see upon them? Can you draw the picture?"

Such study of the lesson with the teacher shows the child how to study by himself, and keeps him from simply naming the words on the page without getting the thought. These lessons should be given frequently in second and third grades. They may be followed by reproduction of the material in the child's own words.

Picturing with pencil. — A help to see the picture which the sentence suggests is the picturing with the pencil. The imagination works more definitely, and the words grow to have definite meaning, as the child pictures his thought. This suggests profitable busy-work for primary grades. The accompanying illustrations show work done by children in the first school-year in illustrating the poems and stories read to them.

This picturing serves a double purpose. It not only helps the child to the recognition of the idea in the word, and impresses that idea, but it also affords to the teacher a picture of what is in the child's mind, and so helps to guide her teaching.

Reading to children. — If we would have the children love what is good in literature, we must early familiarize them with it. No literature has a stronger hold upon us than that which we loved as children. Into our childhood associations were woven the poem and story, so that the charm of the early days comes back with the familiar words. Long before the child learns how to analyze the poem or essay, and to weigh the words which the author has chosen, he feels the spirit of the story and is unconsciously uplifted by it. There is a period of absorption of literature which must precede analysis of literature. Read to the children much and often, but only the best: so will you keep before them the ideal which will unconsciously influence their choice as they enter the world of books. Recall in their walks through woods and fields the beautiful pictures of Whittier's "Barefoot Boy." Let the snow-fall suggest the dearly loved "Snow-bound." Bring Hawthorne to tell his "Wonder Stories," and Longfellow to sing the music of his "Hiawatha." Read of the life of the Orient and the old days of Greece and Rome. Tell the true stories of noble deeds. Keep high ideals, both of thought and expression, before the children, and kindle in them the desire to explore for themselves these Elysian fields of which you have given them a glimpse.

The newspaper. — What has been said of the ideals which should be presented to children may serve as an argument against using the newspaper in the schoolroom. In neither subject nor fashion of expression does it serve as a model. There is much in the columns of the daily paper which we would withhold from a child. As an avenue for information it may be useful to mature minds, but we cannot afford to use it before the standard of literature is fixed.

Supplementary reading. — The use of supplementary reading has become so general that we can hardly speak of it as supplementary; it has become incorporated into the work of all progressive schools. The need lies in the fact that pupils memorize the contents of the pages of the one Reader long before they have conquered their difficulties, and there is no incentive to study the sentences or to closely observe the words which they contain. Supplementary reading presents the same words in new relations expressing new thoughts; and the child, desiring to obtain the new thought, is urged to closer attention and more earnest study. The multiplication of books suited for school Readers multiplies opportunities for practice in interesting ways, and develops skill as it can only be developed, — by practice.

Easy reading. — Much easy reading tends to ease, accuracy, and fluency. The attempt to read what is too difficult leads to halting and stumbling. The eagerness to read in an "advanced Reader" often results in fixing these faults, when an abundance of easy reading would give the necessary skill.

Concert reading. — Reading in concert is a device often adopted by teachers in the hope of accomplishing more work than in individual reading. The hope is not founded upon principles of teaching nor knowledge of children. A little careful observation shows us that in concert-reading the bright child or the loud-voiced boy leads, the others waiting to follow. The result is a dragging chant which has in it neither life nor thought, and which effectually prevents the natural and easy expression which should be cultivated in all the lessons. The only place for concert-reading is in vocal exercises when the selection is easy or familiar, or in the recitation of gems already completely memorized.

A term in common use among teachers is "sight reading," used to denote the reading of books not in daily use, and without preparation. The object of such exercises is to test the pupil's power to read, and to afford practice in reading without previous study. The material chosen should be less difficult than that selected for the lessons to be studied. As our Readers are graded, the pupil should use as "sight Readers" the Reader of the grade below his own.

The exercise in reading at sight is not so valuable to the child as the lesson to which he has given previous thought, and should not usurp the place of the prepared lesson. It serves as an excellent test, however, and possesses the charm of novelty which enhances the interest in the lesson.

V. LESSON IN READING.

(Grade 3 to 5.)

Subject. — Longfellow's "Builders."

Purpose. — The ruling purpose in teaching the poem to children is to lead them to appreciate the loyalty to an ideal which inspires faithful work, even if the results are unseen. From this thought the pupils are led to look at the temple as a type of their own character, which they should build as loyally.

Means. — Intelligent reading of the poem, with application of the truth to daily life of the pupil.

Preparation. — See that the children already have adequate ideas which underlie the words used in the poem. The seen is used to interpret the unseen, and can serve as an interpreter only when intelligently

understood. In the poem the building is used as a type of the unseen but real character. Direct the thoughts of the children first to some visible building which is in process of erection. Who plans the building? Who works to carry out the plan? What is the work of each one? What materials does each use? Where must the best work be done? What if some of the foundation stones are omitted or unevenly placed? What if the timbers are not well fastened together? What if the material is poor and worthless? I once saw a brick building over whose door a stone tablet bearing the builder's name was seen. The building was nearly ready to fall because it had been cheaply built. What was it always saying of the builder? One summer as I rode through the country, I saw a fine farm whose fields were separated by solid stone walls. My friend said to me, "Joe White built those walls. He is dead long ago, but his walls still stand. You can know them whenever you see them, they are so well built." What were the walls always saying of their builder? In the old world are many beautiful cathedrals made of stone Some of them were hundreds of years in building. The plan was made centuries ago, and ever since workmen have labored to carry out the plan. In some of them are niches (explain) in which stone statues are placed. Some of these niches are high up in the walls where no one will ever climb. There are parts of these statues that will never be seen. The workmen knew this when they carved them, and yet these statues are perfect in every part. Why? What do they tell you of the workmen? (Show pictures of cathedrals.)

Study of the poem. — Read entire poem to the children, and then ask them to read it aloud. Question

after the reading. What does the poet call all of us? Where does he say that our work is? What structure do we build? What do we use to build it? By what means, with what tools, are we shaping to-day? A boy works hard to solve a problem in arithmetic,—does his very best; how is he shaping his to-day? Another copies his neighbor's work; how is he shaping to-day? Another leaves undone to-day's work; when can he do it? There is a "yawning gap between." Who sees? Do you? Does any one? How wrought the old builders? How should we? How can we make ready for to-morrow's work? When?

Memorize and repeat often. Use the thought of the poem in appealing to the scholars for faithful work. It should impress the ideal of honest, faithful, every-day work, and should lead the pupils to respect such work. The next step is to lead them to *choose* it.

VI. PRIMARY LESSONS.

[illegible] READING—LESSONS GIVEN [illegible] PUPILS.

[illegible] (Under School.)

How can *we be* sunbeams?
We can make people happy.
Kind words are little sunbeams.
Loving smiles are sunbeams.
Who made the pretty sunbeams?
God made the sunbeams for *all* of us.
The sunbeams love little flowers.
They wake the flowers when they sleep.
They kiss the little flowers.
The flowers smile back to the sunbeams.
Then the sunbeams are so happy.
They think they are paid for coming so many, many miles.

Seat Work. — Sew and color the sun. Play: Finding the sun. Songs: "Good-morning, glorious Sun;" "You pretty Sunbeams." Recite: "How beautiful the setting Sun."

THE MOON.

I can see the moon.
The moon can see me.
It is up in the sky.
It gets its light from the sun.
The moon gives us light at night.
It is a pretty lamp in the sky.
Sometimes the moon is round.
Then we call it full moon.
Sometimes we can see half-moon.
Sometimes we see the new moon.
I like the pretty, new moon.
She looks so bright.
She has two sharp horns.
I think she looks like a cradle.
Alice says she looks like a silver boat.
Do you think there is a man in the moon?
Yes, I can see the funny little man.

after the reading. What does the poet call all of us? Where does he say that our work is? What structure do we build? What do we use to build it? By what means, with what tools, are we shaping to-day? A boy works hard to solve a problem in arithmetic, — does his very best; how is he shaping his to-day? Another copies his neighbor's work; how is he shaping to-day? Another leaves undone to-day's work; when can he do it? There is a "yawning gap between." Who sees? Do you? Does any one? How wrought the old builders? How should we? How can we make ready for to-morrow's work? When?

Memorize and repeat often. Use the thought of the poem in appealing to the scholars for faithful work. It should impress the ideal of honest, faithful, every-day work, and should lead the pupils to respect such work. The next step is to lead them to *choose* it.

VI. PRIMARY LESSONS.

EXAMPLES OF SCRIPT READING-LESSONS GIVEN TO FIRST-GRADE PUPILS.

SUN AND MOON STORIES.

(B First Grade. K Room, Greeley School.)

I see the pretty sun.
It is up in the sky.
It gives us light.
It makes us warm.
It makes things grow.
It makes us happy.
The sun sends little sunbeams to us.
When we have no sun we can play sunbeams.

How can *we be* sunbeams?
We can make people happy.
Kind words are little sunbeams.
Loving smiles are sunbeams.
Who made the pretty sunbeams?
God made the sunbeams for *all* of us.
The sunbeams love little flowers.
They wake the flowers when they sleep.
They kiss the little flowers.
The flowers smile back to the sunbeams.
Then the sunbeams are so happy.
They think they are paid for coming so many, many miles.

Seat Work. — Sew and color the sun. Play: Finding the sun. Songs: "Good-morning, glorious Sun;" "You pretty Sunbeams." Recite: "How beautiful the setting Sun."

THE MOON.

I can see the moon.
The moon can see me.
It is up in the sky.
It gets its light from the sun.
The moon gives us light at night.
It is a pretty lamp in the sky.
Sometimes the moon is round.
Then we call it full moon.
Sometimes we can see half-moon.
Sometimes we see the new moon.
I like the pretty, new moon.
She looks so bright.
She has two sharp horns.
I think she looks like a cradle.
Alice says she looks like a silver boat.
Do you think there is a man in the moon?
Yes, I can see the funny little man.

He likes to sail in his little silver boat.
He rides in the pretty sky.
Can we ride in the moon?
No, we can *play* we can ride in it.
We will see what we can find in the sky.
Oh! I see such pretty stars.
I see a big and little dipper made of stars.
The man in the moon drinks milk from these dippers.
He gets the milk from the "milky way."
What can you find in the sky?
Oh! I see a big and little bear made of stars.
Grace sees a little dog made of stars.
She thinks it is her little Rover.
Good-by, pretty moon and stars. The sun is coming to put you *all* to bed.

Sing: "Sleep, Baby, Sleep." Recite: "O, Mother, how pretty the Moon;" "Twinkle, twinkle, little Star."

The following are some of the lessons given before Christmas to the children who entered in September.

The shepherds lived far off in the east.
They took care of the sheep at night.
One night they saw a big star.
It was so bright they were afraid.
The angels in the sky said they must not be afraid.

The shepherds were asleep on the hill.
The sheep were all asleep, too.
A bright light came in the night.
The shepherds all woke up.
They were afraid of the bright light.
They heard the angels sing.
They were not afraid then.
The angels told the shepherds to follow the star.

They came to a small city.
The city was Bethlehem.
The star stopped over a little stable.
The shepherds found the little babe in the stable.
The baby was Jesus.
Christmas is his birthday.

A DUTCH CHRISTMAS.

The little Dutch boy lives in Holland.
He likes to have Christmas come.
Saint Nicholas comes to him on Christmas.
The boys and girls sit up till he comes.
They sing a little song to him.
He puts some candy on the floor.
While they pick it up he runs off.

The boys and girls put their wooden shoes on the table. Then they go to bed.

While they are asleep Saint Nicholas brings them pretty things.

He brings skates to the boys.
He gives dolls to the girls.

CHRISTMAS IN NORWAY.

This little girl lives in Norway.
It is a very cold land.
She likes to have Christmas come.
Her mamma makes white bread on Christmas
She has had brown bread all the year.
She sings a little song in the morning.
Her papa puts some oats on the roof.
This is for the little birds.
The boys and girls like to see the birds come to get it.
They give the birds a happy Christmas.

These children take General Lesson with a second-grade class, subject, "Norse Life and Myths," and these are some of their reading-lessons for the past two weeks.

The Norsemen lived long ago.
They lived in the north.
It was a very cold land.
It was near the sea.
They liked to ride in ships.
The Norsemen did not know about the sun, moon, stars, and winds as we do.
They told queer stories about them.
Odin was their all father.
He was a good, brave hero.
Odin and the heroes made a large city.
They made a large tower in it.
They called it the Air Throne.
They made a large hall.
All the heroes met in this hall.
Odin sat in the Air Throne.
He could look all over the world.

Odin looked down at the men on the earth.
He saw a big giant take the sheep from a little shepherd boy.
He put them all in his pocket.
He saw a man planting corn.
A little dwarf followed him.
He turned the seeds into stones.

Odin did not like this.
He sent Hermod to bring the dwarfs to him.
Hermod was his messenger.
The dwarfs and elves were afraid.
Odin told the naughty dwarfs they must live under the ground
The elves were not bad.

They did nothing good.
Odin sent them to live with the flowers.
They were to play with the bees and butterflies.

Odin told them they must work.
If they did not work they would learn to be naughty like the dwarfs.
They said they did not know how to work.
Odin gave the little elves a teacher.
His name was Frey.
Frey taught the elves many things.
Frey taught the elves how to open the flowers.
He taught them how to make the corn yellow.
He taught them how to put honey in the apples and grapes.
They put dew on the grass. They were very happy.

Frey wanted to go up in the Air Throne.
He wanted to look all over the world.
One night the heroes were in the big hall.
Frey went up in Odin's Air Throne.
He looked east, west, south, and north.
At the north he saw a beautiful lady.
The lady opened a door.
Then a beautiful light went across the sky.
The beautiful lady was Gerda.
The beautiful light was the Northern Lights.
I like to see the Northern Lights.

Frey wanted to see Gerda again.
He went back to the elves.
He was not so happy now.
The elves said he had dew drops in his eyes.
He could not go to see Gerda.
If he did the Frost Giants would come.
Then the flowers would die.
The corn and grapes would not be good.

Frey sent his messenger to see Gerda.
He wanted her to come and live with him.
He gave him his sword.
Gerda said she would come to Frey.
They had a wedding in a little woods.
The elves made a pretty chain for Gerda.
They had acorn cups for her.

Frey rode in his chariot.
Odin and all the heroes were in a big ship.
They heard the leaves talk to them.
They said Frey would want his sword.
He would want it when the Frost Giants came.
We have winter now.
Frey gave away his sword.
He could not fight the Frost Giants.

The children have enjoyed these lessons *very* much, and take the printed lessons better than classes which have done less of the work with script.

HILTJA VANDERBIE.

NOTE. — These lessons were given in December to children who entered school in September and October. The school was made up of three classes in first and second grades; the above was the work of the lowest class. It is chosen because it represents work growing out of conditions nearly like those found in country schools.

IV.

SPELLING.

WHAT are we asking a child to do when we ask him to spell? To hold the picture of the word in his mind so exactly that he can reproduce the form in writing, or name in order the letters which make the word. How shall he be taught to do this?

Spelling involves power to recognize and remember form. This power can be gained only by observing forms, — seeing resemblances and differences. The child is helped toward good spelling by every lesson in which he observes forms, and notes their resemblances and differences. Drawing, writing, reading, word-study, all help to make the good speller. But there must be also definite lessons in which the child gives his attention to the forms of words, with the intention of reproducing them.

Another power that is needed in spelling is the power to associate with the sounds included in a word the characters which represent them. Many of the words in the English language must be spelled by sight alone, since there is no phonic law which governs them. But there are many large classes of words which are spelled exactly as they are pronounced, and a knowledge of the sounds of the letters at once gives the key to the pronunciation. Besides observation of form, the child must give attention to sounds. He must know all the possible sounds of the letters, singly

and in combination. In teaching children to spell, then, we must aim toward these results, — power to see the word so clearly as to hold it accurately in memory, and reproduce it exactly; and as a means toward this end, attention to the sounds of the letters, so that the phonic laws which govern our spelling may help in this reproduction.

The recognition of this purpose would give definiteness to the spelling lesson, and enable the teacher to dispense with much of the aimless droning over words.

The first step in learning to spell is learning to see and distinguish forms. There are many varieties of exercises that are helpful in this direction. For the little children, cut cardboard or pasteboard into different forms and sizes, and teach the children to assort them, placing together those which are alike. Letters printed upon cardboard may be used in the same way, and words are next in order. Cut from any newspaper a column or paragraph of print, and instruct the children to draw a pencil-mark through every word which is like the copy you place before them. In order to do this, the child must keep in mind the form of the word which he is to recognize and mark. And this holding the form in mind is the first requisite for good spelling.

The next step is accurate copying of the word set before the child. Many teachers begin the oral spelling too soon, ignoring this important step. Copying the word from the board fixes it in the mind. The next harder step is to copy it or write it from the mind-picture, the word being erased from the board. Much work of this order should be done in the first year of school.

The next and hardest step is naming the letters of the word in order, from the memory of the form of the word. While oral spelling is more difficult than written spelling, it is at the same time less helpful. We need to spell only that we may write. We shall need, in actual practice, to write a word a hundred times to once spelling it orally. The chief value of oral spelling is the concentration of attention upon the mental picture which it requires, and the emphasis which it gives to syllabication and the phonic value of letters. It should be used to vary the spelling exercises, but the written spelling should predominate.

Much is gained if the pupil is taught correct habits of study through the spelling lessons. It is a mistake to direct him to "study the spelling twenty times over," or to write it ten times. He should learn from the beginning to observe each word carefully, fixing its form in mind in the shortest possible time, not the longest possible. He should decide for himself which word demands the greatest effort in its mastery, and apply himself to learning it. Such study of the lesson leads to power as well as knowledge. Let us illustrate: The teacher has assigned as the spelling lesson these words, which I find at the head of a Third Reader lesson, — *destroying*, *doubt*, *forward*, *instantly*, *vegetables*, *result*, *clumsy*, *tongue*. What should be her first question? "Which of these words are new to the children? (If any are already familiar, no time should be wasted in studying or copying them.) All are new. Then which are easiest? Those which can easily be spelled by sound: *De-stroy-ing* is easy; it could not be spelled otherwise. How many syllables? Pronounce the first; the second; the third. Cover it and

write from memory. Now compare your copy with the word. What word next? *Vegetables.* How many syllables? What is the sound of *g?* Copy from memory. What must we remember about *doubt?* *b* is silent. What is the sound of *s* in *result?* Like *z.* In *clumsy?* The same. Anything new or hard about *instantly?* About *forward?* About *tongue?* Yes. *ue,* final, is silent; *o* has the sound of short *u*; *n* and *g* are sounded together. Look carefully at the word, and fasten it so that it will not slip. Cover, and write it five times. Let no one fail on that word."

Such study is much more valuable than the indiscriminate copying or repetition of the letters. It centres the attention on the point of difficulty, and masters the form at once.

Shall we require the children to use the words in sentences? Yes, if the meaning is new, or you wish to test their knowledge of the meaning. Otherwise the exercise is of no value in learning to spell. When the use of sentences is required, insist upon sentences which mean something, — not "I see some vegetables," but "Turnips and carrots are vegetables;" "The heat is destroying the crops."

If it falls to the lot of the teacher to select words for spelling, she should aim to make the pupils familiar with three classes of words: —

1. Words spelled in accordance with phonic law, so that each word becomes the key to all similarly spelled and pronounced, — as *block, night.*

2. Words in common use, which must be frequently repeated in all writing, — as *which, have, were, there,* etc.

3. Words which are unusual in their spelling, or must be spelled by sight, — as *tongue, thorough,* etc.

Such words need not be spelled by sound, but it is helpful to analyze the sound of the word, showing what value is given to each letter; thus, in *tongue*, *o* has the sound of short *u*, *ng* is a digraph, and final *ue* is silent. Such attention to the word helps to fix the form in memory.

Groups of words associated in meaning are easily learned by the pupils, — the association helps. Articles to be bought at a grocery, at the hardware store, to be seen in the kitchen, the parlor, on a farm, in the library, are among the many lists which may be chosen.

The manner of conducting the spelling exercises should be varied, not only in order to arouse greater interest, and the attention which accompanies interest, but also to afford tests of the pupil's power in different directions. The fashion of the method may be changed in many ways, to suit the personality of the teacher and class, but the following may be used to advantage in every schoolroom: —

1. *Dictation Exercises.* — These are of two classes, — exercises which the pupils study in advance, and those which are given without previous preparation on the part of the pupil, as a test which may show the teacher in what directions the pupils need further study. A word as to the preparation and correction of work in the first-named exercises.

The selection to be studied should be written neatly upon the board, unless it is contained in some text-book which all the pupils possess. Before they attempt to study it their attention should be called to the points which they need to study most carefully. Is it prose or poetry? If the latter, how is each line written? What is the *new* word in the first line? How spelled?

What marks of punctuation are used? Why? In the last papers written by the class, a certain mistake was made. What? What shall we remember in this writing?

Every teacher should have in her schoolroom a cambric curtain which slides on rings upon a cord, and which can be readily moved to cover any part of the blackboard. If the dictation exercise is placed upon the blackboard early in the morning, the curtain should cover it until time for use, that the exercise may be fresh before the eyes of the children and so their interest may be better secured. While the class studies the lesson, the curtain is drawn aside. When the time for recitation comes, the teacher can easily cover the exercise with the curtain, thus removing all temptation to copy, and yet retaining the selection for future use. When all are in readiness for the writing, the teacher should read once, slowly and clearly, the sentences to be written, but once only. If the child knows that he will be given repeated opportunities to get the sentences he will not listen so carefully. It is fair to say, however, that the teacher's pronunciation should be distinct and her voice clear. Much of the child's power to listen well depends upon her power to speak well.

Guard against interruptions during the dictation. Let the undivided attention be given to the words to be written. If John asks one question and Kate another, all the children stop to listen. If a window must be closed or a door opened, let it wait for the moment, rather than turn the thoughts of all the class away from the dictation to the window or door. In the teacher's endeavor to correct pupils she often so emphasizes the fault as to draw the attention of the entire school away from the

lesson in hand, and then she wonders why the pupils are inattentive. Help the children to habits of attention by your own attention to the lesson.

After the writing is done the exercises should be corrected. Will you have the pupils correct their own failures, or correct one another's, or will you correct all errors for them? No one method is good enough to exclude all the others. "My pupils cannot correct their own mistakes," says one. "Why not?" "Because they do not see them, or else are not honest enough to say that they do." The best of reasons, these, for using the first method. The pupil does not see the mistakes because he has in mind the wrong picture of the word and repeats the mistake which he has made in writing it. Teach him to compare his work with the original pattern upon the board, not with the image in his mind. Remove the curtain and compare, line by line. Is the boy dishonest in his corrections or report? Then help him to feel that honesty is better than a seemingly perfect paper. Your comment and approval will effect this if stress is laid upon the right thing. The training in correcting his mistakes is quite as valuable to the pupil as the first writing of the exercise. Instead of individual correction of their own papers, the children may exchange with their neighbors, in some regular order. This method is good, for many reasons. It gives the children opportunity to compare their own work with another's. It ensures marking the spelling or punctuation for what it is, not what it is meant for. "Oh," complains John, "Jack has marked my word wrong, and I spelled it right." "He wrote a W instead of an M," says Jack. And if the teacher is wise the M that looks like a W is marked wrong, until John learns thereby to

be more careful. Such criticism may be made very helpful to both critic and criticised. Great pains should be taken to encourage an honest, friendly spirit in criticism. Guard against the comparisons which exalt the work of one at the expense of another. Encourage the spirit which rejoices in another's well-doing or progress. This is worth more than a perfect paper in spelling. But the one need not be sacrificed to the other.

Neither method of correction above described will take the place of the teacher's personal supervision of the work. It is not necessary for her to look at all papers every day, but she should see them often enough to know how every pupil progresses. The pupil prizes her personal recognition of his good work. Her eye will discover in his papers what he would never see, for his mistakes are typical to her and tell of lines in which he needs to work.

The chief value of the examination of the papers is that the discovery of mistakes prevents their recurrence. This is true only when the teacher calls the attention of the child to the error and leads him to remedy it. The child must learn to profit by his failure, and to avoid any repetition of it. See that the misspelled word is carefully studied and repeated.

2. *Oral Spelling.* — In oral spelling the word should be pronounced by the child before spelling, to fix the attention upon the word and to show the teacher that he hears it correctly. In spelling, the syllables should be divided by slight pauses. The child should be trained to see the syllables in a word, and to separate the word into syllables. Such training helps in both pronunciation and spelling.

3. *The Spelling Match.* — The spelling-match is too

good to lose. No other fashion of oral review so delights the hearts of the children. It should not be omitted.

An interesting exercise is that in which each child names and spells a word beginning with the letter with which the last word ended. If number one spells *wagon*, number two may give *needle*, number three, *error*, number four, *ready*, etc. If the words are limited to a certain number of syllables, still more thought is required. Words may be required to begin with a certain letter, to contain a certain letter, to be proper names, or may be verbs, adjectives, or nouns. Such variations add to both interest and profit.

The spelling should include word analysis, and phonic analysis. Children should know all the sounds of the letters before leaving primary grades, and should be able to make words containing given sounds. Careful attention should be given to rhymes, to words spelled alike but pronounced differently, and to words pronounced alike but spelled differently. Lists of words illustrating some of the fundamental rules of spelling should be frequently given. The following will suggest many others which the teacher should prepare for the class.

I. Words alike in termination: —

back hack Jack lack pack rack sack
tack black crack clack whack knack

II. Words derived from same root: —

call calling caller called recall miscall
fall falling fallen

III. Words pronounced alike but spelled differently:

(to too two) (see sea) (meat meet)

IV. Words illustrating a certain sound of some letter; as *it, sing, will, ship*, etc., showing the short sound of *i*; or *cat, calm, cake, cane, crab*, illustrating the hard sound of *c*.

V. Lists of nouns ending in *y* which change *y* to *i* before *es* in the plural; as *lady, penny, baby, story*.

VI. Lists of words which change the final *y* to *i* before the suffix *er*; as *happy, happier; merry, merrier*.

VII. Lists of words which double the final consonant before a suffix beginning with a vowel; as *trap, trapping, sin, sinner, sinning*.

VIII. Lists of common syllables with different modes of spelling; as *tion, sion*, and the first syllables of *certain* and *sirloin*.

IX. Compare vowel sounds, and find equivalents.

X. Compare words alike in some sounds.

XI. Learn to know and name the following, as indicated in Webster's International Dictionary: —

ā take	ō old	ē see	ī ice	ū use
ă can	ŏ odd	ĕ fed	ĭ sit	ŭ up
ä arm	ô orb	ẽ fern	ĭr fir	u̇ full
a̤ ball				u̇̄ rude
				ũ urn

o͞o food	ou out	ç civil	g̃ good	qu kw
o͝o foot	oi oil	c cat	ġ gem	

s sing	th thin	ch (tsh) chin	c̣h (sh) chaise	
s̤ does	with	(k) echo		

V.

GEOGRAPHY.

I. AIM AND PLAN.

GEOGRAPHY is the study of the earth as the home of man, and the chief aim in studying geography is to know the earth in relation to man, to study the natural forces, animal and plant life, climate, location, divisions of land and water, to learn how they contribute to, how modify, the life of man, and to recognize the laws by which man's life is governed. The early study of geography should be given to observation of the life at home, near the child, — nature as he sees her in his home surroundings. Through the early lessons he must become familiar with the life of the animals and plants in his neighborhood; with the movements and appearance of sun, moon, and stars; with the work of frost and rain and sun; with the minerals and soils; with the fields and brooks. Through learning to observe these definitely and thoughtfully he possesses himself of ideas which will help him to interpret all truths of geography later. He can only know the life of the Esquimau in Greenland by seeing first the winter life in his own home and imagining the related conditions in the still colder country. The orange which he has seen in the market, and the plants in the greenhouse, help him to imagine the orange groves in California and Florida. The study of the

wayside brook leads him to understand the river Nile and the Ganges. The fern that he sees by the familiar brook must help him to interpret the tropical forests of ages ago. The life of the kitten and dog which are his playmates introduce to him the tiger and the wolf. The corn in his garden patch must grow to represent the great harvest of Kansas, and the little field of grain widen to represent the wide farms of the Dakotas. The hill up which he draws his homely sled must rise in height till it typifies the Himalayas. The little pond on which he skates in winter and by whose edges he watches for frogs or water-lilies, or where he fishes in summer, must widen its borders as he pictures the Great Lakes or even the wide ocean. The messages that he learns from flower and bird and bee, help him to interpret the lives of plants and animals everywhere. The study of the blacksmith's forge or shoemaker's bench, the work of the "butcher, the baker and cabinet-maker," as he sees them day after day in his own neighborhood, lead him to understand the commercial conditions and occupations of men. His little barterings with his mates are the type of the commerce that covers the ocean with sails. Watchful, thoughtful, sympathetic study of the world at home prepares him to know the world abroad.

It must follow then that the early lessons in geography are simply lessons in observation of natural objects. The science lessons lead the way to geography. All lessons which enable the child to see clearly that which lies about him and then to picture from that the related unknown, thus developing his powers of observation and imagination and interpretation, are really fundamental lessons in geography. The study of geog-

raphy as such may not begin before the third grade. In that year of school one period a day may be given to oral geography lessons, to related observation lessons, and reading which will lead the thought of the child away from home to the home of other boys and girls and the conditions which surround their lives. Through this observation and reading, the imagination should become sympathetic, and the child should be taught to put live conceptions under the otherwise dead words of his geography. After a year of the study here outlined he ought to be able to work from books, interpreting the words there used and making the pictures real and the experiences actual.

A part of this year's oral work should be given to excursions, which will give the children new power to observe, not only plant and animal life, but the forms of land and water and the forces at work to produce them. All the natural features of the country near at hand, the brooks, the ponds, the meadows, the hills, should be observed, drawn, described; and the teacher, by her thoughtful questioning should lead the children to question their surroundings, to ask why the pond is where it is, why the brook flows in the direction in which it does flow, why the grass grows greenest in one part of the meadow, why pines are found in one section and dwarf oak in another, how the pebbles are rounded, how the leaf mould is deposited, "how the robin feeds its young or the oriole's nest is hung." The chief object of the excursion should be not so much to accumulate knowledge through the teacher's description of what she sees as to develop in the children the habit of thoughtful seeing, questioning, and imagining. Outline lessons given later will suggest

some of the work. A full and most excellent outline has been prepared by Mr. Frank Murdock, of the Bridgewater State Normal School of Massachusetts. The teacher will find its pages most helpful and suggestive.

Another form of the oral lessons should be the study of the occupations of the people, and this study should be so conducted that the child will come to realize the one great truth that all men have their work to do and that all are working together for the good of the whole. Lead the child to question what people have been at work in order that he might have his morning's breakfast, his dinner, or his supper; what people must labor and how, in order that he may have the schoolroom with its furnishings; what animals, what plants, what people, have contributed to his clothing; what labor has entered into the manufacture of the books which he reads, his toy, or the utensils with which he works. Description of the work which each trade involves, the materials which are used, the tools which the workman must employ, the wages which he receives, the conditions under which he labors — all these may be discussed by even the lowest classes; and this description should lead not only to knowledge and thoughtfulness, but to a realizing sense of the dignity of labor and responsibility that rests upon us all to do our part in the work of the world. No other subject is more helpful, none tends more truly to help the child to rid himself of selfish love of ease and fit him to do his part of the world's work.

Another subject for discussion should be the buildings of the city, the streets, the parks, the schools, and the government. Who pays for the erection of the

City Hall or the Town House? Who pays for the paving or straightening or the widening of roads? For laying of sewers, for the lighting of the streets? Who provides the schools and pays for their maintenance? Why is it right for them to do this? Why do they do it? What is the need of government in the home; in the base-ball match; in the tennis game; in school; in city; in the state? Why should rules be made, and by whom should these rules or laws be obeyed?

Following the outline thus suggested, the child should learn the representation of places by the diagram or map as a preparation for map study. The object of these lessons will be to enable him to interpret maps, to read the lessons which they have in store for him, and to express his knowledge of place and size and relative position by means of maps and diagrams. It is a mistake to lay too much stress upon this department of geography. It is only one phase of the work which the child should do. The life study which has preceded this work is the more important of the two.

In order to understand the meaning of the map, the child must learn to represent familiar places by maps or diagrams. He should begin with the school desk, should measure it accurately, and then draw by scale a representation of its surface. Upon this diagram he should name the directions, north, east, south, and west, and learn the arbitrary law that the top of the map represents north, and the bottom south, and the right-hand east, the left-hand west, etc. From the desk his next step should be the diagram of the schoolroom, placing the doors, windows, desks, teacher's desk, etc. This, too, should be drawn from accurate measurements, that the child may get the idea that the

map represents proportionate and not actual distances, relative and not absolute size. The drawing of the school-yard is next in order; then the representation of one or two of the main streets of the town, with some of the prominent buildings. This should be enough to enable the child to recognize the meaning of the lines that are used in representing different portions of the earth's surface, and to clearly interpret the maps used in his geography. Thus the maps should be studied by the child with the same observation and thought which is involved in the science lesson. The child should see and think, — should question, and not simply answer the questions suggested in the text-book. Let him question his mates as to what they learn from the map, in order that he may be more eager to search for himself. Let the map study invariably precede the study of the text, so that the child may learn to think for himself instead of accepting the statements of others. He looks at the map of North America, sees the location of the river basins. What do they show of the slope and height of the land? Why does the Mississippi flow south, and the McKenzie River northwest? The St. Lawrence southeast? Why are the rivers of the eastern coast so short? Of what use can they be? What use can be made of the St. Lawrence and the McKenzie? Why? Suggest questions the child's study of the map should answer, and such study will enable him to come with deeper interest to the words of the text.

Preceding detailed study of the map, the lessons on the globe should be given; the form, size, movement, zones, the relations of land and water, should be considered. This study of the earth as a whole should

precede the detailed study of continents, countries, and States, in order that each of these may be considered in their relation to the larger whole. During the first years the child has been studying his own environment, getting new ideas which will enable him to interpret life and conditions away from home. His thought has been reaching out, from the familiar to the strange, from the near to that which is far away. Now he must come to the study of the earth as a whole, for which his previous study at home has prepared him, and he must learn to recognize his home as a part of the great earth, influenced by the conditions which influence all life, which govern life in all lands. The study of the globe prepares now for the study of the continent. The study of the continent prepares the way for the study of the country; this is followed in turn by the study of the State, especially the child's own State, which must be known in its relation to the others which with it make up the fatherland. Then the government and history and present conditions of the county, city, or town, may be intelligently understood.

After this detailed study there should be a summing up of what the child has learned, — an analysis of his knowledge, a grouping according to subjects. Now he studies, not the country with its different interests, but some subject which is illustrated in all countries, — the river basins of the world, mountain systems of the world, winds and currents, governments, religions, races of men. Such review prepares the child for outside reading in the lines in which he is interested, and deeper and clearer thinking. Such study prepares the way for the life-long study of the home of man.

II. SUGGESTIVE LESSONS.

LESSON ON SNOW.

(First Grade.)

The general lessons for the month January were upon snow-crystals and other forms of water, and their uses.

The aim of the work has been to cultivate the observation, powers of expression, and the imagination. Parts of the poem by Lowell, "The First Snow-fall," have been learned in connection with the work.

The story which forms the basis for "The Snowflake's Story" was read by the class from the blackboard as reading lessons.

The class had previously read one chart, one primer, and considerable blackboard work. They had constant practice in reproduction.

AMY V. ATKINS, *Teacher.*

THE SNOWFLAKE'S STORY.

(Reproduction was written down exactly as given by pupil.)

"How do you do, little snowflake? I am glad to see you. Where did you come from? Are you a winter flower? May I take you into the house?"

"If you do, little girl, I will take off my winter dress."

"Where do you live?"

"I live in the big sea. One day I thought I would like to travel. I asked some of my friends to go, too. Many said they would like to go. The cloud was our train and the wind was our engine. We rode over many cities and towns. We saw many rivers and ponds. One day we met another en-

gine. It was a cold wind and it made us cold. That was when we put on our winter dresses.

"This made us heavy, so we broke through our car and came flying down.

"The children were glad to see us. They run and jumped and said, 'Oh, it is snowing!' You see we did one good thing. We made the little people happy.

"Now I will tell you about my dresses. My every-day dress is named water-drop. One of my dresses is named vapor dress. I put that on when I am too warm. It is a thin dress. One of my dresses is called a snowflake. I wear my snowflake dress when it is cold. My very thinnest dress is steam. You cannot see it at all.

"I will tell you *one* good thing I can do. When I am steam I can help make the engines go.

"When I am a snowflake I help cover the little flowers so they will not freeze. When I am a rain-drop I help give little flowers their drink.

"When I am on my way home I run down the hills, through the rivers and lakes to the sea. I feel very glad to get home."

Given orally by PAULINE THOMAS.

LESSON ON THE WIND.

(Second Grade.)

I.

Object. — To lead the children to observe currents of air and to question first as to the cause, second as to their usefulness. Place light feathers over the stove or register. Thistle-down, milkweed-seed, or tinder, may be used in the same way. "What does the feather do?" "It rises." "Why?" "Because the air carries it up." "How does the air over the stove or register compare

with that in the other part of the room?" "It is warmer; it is heated." "Then what air is moving from the stove?" "The heated air." "In what direction?" "It is moving up, or rising." "But if the heated air rises, taking the thistle-down with it, what must there be in the place where the heated air has been?" Other air comes in. If we open a window the air from the window comes in toward the stove. The thistle or feather floated in other parts of the room will be drawn toward the heated current. When our boat is carried down stream by the water, we say it is moved by the current. We can speak of the moving air as a current. "Is the air in the room quiet or moving?" "It is moving." "How do you know that it is moving?" "Because the thistle-down and feathers move with it." "What makes it move?" "The heated air rises and the colder air takes its place." "If I put a piece of cork and a stone in this pan of water, what does the stone do?" "It sinks to the bottom." "Why?" "Because it is heavier than the water." "What does the cork do?" "It floats." "I hold the cork in the bottom of the water; what does it do when I release it?" "It rises." "Why does it rise?" "Because it is lighter than the water." "Why does the heated air rise?" "Because it is lighter than the other air." "Then we have found that the heated air in the room is lighter than the colder air, and that it rises." "Where does the cold air come from to take the place of the heated air?" "It comes from the sides of the room near the windows." "In what direction must it move?" "It moves toward the stove or register. If the stove is at the east side of the room the air moves toward the east and from the west. If the stove is at the west side of the room the air moves toward

the west and from the east." "At recess we will notice the air out of doors and see whether it is quiet or whether it seems to be moving." The children learn that it is moving and report after recess. "In which direction is it moving?" "Toward the north. It tore a piece of paper; it blew Johnnie's kite; it blew the ends of my scarf." "Why do you suppose the air out of door moves? Why does it move in the schoolroom?" "Because one place is warmer than another, and the air moves toward the warm place where the heated air has risen." "So it must have been with the wind; air is moving toward a place which has been warmer and from which the air has risen."

II.

"Yesterday we found currents of air in the room and out of doors, and we called these out-of-door currents wind. Yesterday the wind was blowing from the south. That was a south wind. The wind blowing from the north would be what?" "A north wind." "A wind from the east?" "A wind from the west?" "A wind from the south-east?" "A wind from the south-west?" "Let us see what the winds do for us. Who can tell? What is it that moves the arms of the windmill?" "What is it that moves the sails of the ships?" "What is it that brings the clouds with the rain?" "What is it that dries the clothes on washdays?" "What is it that takes away the hot air from our faces and makes our rooms cool in the summer time?" "When the air in the schoolroom becomes hot and stifling and unwholesome to breathe, what does the wind do for us?" "If the air of the city becomes foul and bad, what does the wind do for it?" "The wind brings health on its wings.

It brings the rains that water the earth and make it bud and blossom. The winds help us to carry our messages and do our work. We could not live without them." Let the children commit to memory the poem on the winds from "Open Sesame," or recite the familiar lines, —

> "Whichever way the wind doth blow,
> Some heart is glad to have it so,
> So blow it east or blow it west,
> The wind that blows, that wind is best."

Show the children pictures of a windmill, and tell them of the work done by windmills in Holland. Show the picture of a sail-boat, and talk of the work which the winds help us to accomplish. "The winds and waves are on the side of the ablest sailors." Ask the children to explain the meaning. Tell them the story of Ulysses and the winds; of Æneas and Æolus.

STUDY OF OCCUPATIONS.

(Third Grade.)

Lumbering. — Let us look about the room this morning and name everything that we use that is made of wood. Yes, the desks, the floor, the doors, the casings and the blackboard, the window-frames, the seats, the frame of the clock, the wood of lead-pencil, the pointer, the back of the erasers, the entire frame of the building itself; all are made of wood. We could hardly have our school and prepare our lessons without this useful material. Where does it come from? Yes, from the trees. Where do the trees grow? In the woods. Where are the woods? Those nearest to us that are

cut down for lumber are in the northern part of Minnesota and Wisconsin. What should we see if we were in the pineries? Mile after mile of unbroken forest, tall trees, higher than our heads, birds, squirrels, bees, and brooks, wild flowers, but no man until the lumberman comes to cut down the trees to be made into lumber for us. The tree must be felled. By whom? How? Its branches must be trimmed. It must be cut into logs, carried to the river bank, rolled into the river to be floated down a hundred miles — often two or three hundred miles, to the saw-mills. How does the lumberman live while he is in the woods? What does he eat? Who cooks his food? What is his house? Who is with him? Are his wife and children, too, in the woods? Are there schools and churches, as we have? Does he work in winter or summer? What tools does he use? How does he get the logs to the river? How will the owner of the logs know them when he sees them? Will they float straight down the river till they get to the mill? Who takes care of them, — pulls them off sandbars or snags or out of coves where the river bends? Who sees that they stop at the right place, — at the right mill? What is the place called where the logs are kept before they are taken to the mill? What are the men called who take care of them? What tools do they use? Is their life easy or hard; dangerous or safe? What kind of men must they be? What is done with the log when it is taken into the mill? How is it sawed into boards? What moves the machinery? What men must work in the mill? Where are the boards placed after being sawed? Who buys them? Who moves them? Who works upon them? What men must work to complete the schoolhouse from the boards and beams?

What tools must they have? What must they know? If they did not know how to do their work well what kind of buildings should we have? How must they do it? Write the story of the piece of wood that is in your pencil, — that is on the back of the eraser, — that is in your desk; and see what people must help to give you the pencil, the eraser, or the desk.

SUGGESTIONS FOR A FIELD LESSON.

(Primary Grades.)

The school adjourns this afternoon to Mr. Raymond's field, where they sit with their teacher in the shade of the old pine-tree, and hold their little note-books in hand, ready to record their discoveries.

"Let us draw a map of the field," the teacher says. "What is its shape?" "Square." "What is on the north side?" "Mr. Townsend's field." "What separates this field from the one on the north?" "A stone wall." "What lies east?" "The pasture." "What separates this field from the pasture?" "The brook." "What lies on the south?" "The orchard, with a fence between." "And what lies west?" "The road, on the other side of the wall." "What is the highest part of the field?" "Ebenezer's Hill. We slide down that hill in winter." "In what direction do you slide?" "Toward the brook. That is the steepest side." "Why do you choose the steepest side?" "Because you go fastest and farthest. You can go way across the brook. The little ones slide on this side, where it is n't so steep, but they don't go so far as we do." "Call the side of the hill the slope; hold your paper as you think this side slopes; now the side toward the brook; which

slopes most? Which slope do the little ones choose?" "The easy one." "Yes, or the gradual slope. The older boys choose the steep or abrupt slope."

"Suppose the brook were to start from the top of the hill; on which side would it run faster?" "Down the steep side, or the abrupt slope." "Which would make the slower brook?" "The gradual slope."

"In what direction does the hill slope?" "Toward the east, and toward the north." "Which is the lowest part of the field?" "That part down by the brook." "Look across the brook. The land slopes down to the brook there, too; which is the more gradual slope?" "The one on the other side." "Lay two pieces of paper as the slopes lie. Where would you place the brook? What shall we call that low place between the hills? Yes, it is a valley. Let us look at the valley of the brook. Climb the hill and we can see better. What do you see?" "The hill slopes gradually to the south, and then ends in a flat meadow." "Does the brook stop there?" "No, it runs on; I have followed it to the pond." "Why does n't it stop and make a pond in the meadow?" "It must be that the meadow does slope, even if we don't see it." "In which direction do you think it slopes?" "Toward the south." "Why?" "Because the brook flows south."

"Now let us go to the brook; throw a leaf into it. What becomes of it?" "It floats on the top of the water." "Just where you dropped it?" "Oh, no; it is carried along." "What carries it?" "The water." "Why?" "The water is always moving." "Why?" "It is trying to get to some lower place. Father says it is this brook that makes Centre Pond. That is where it goes." "I will let you follow the brook with me on the

map by and by. Now Jamie may throw a leaf in the water and make it float toward me." "Oh, but it won't!" "Why not?" Because that is n't the way the water flows." "The movement of the water is the current. The leaf flows with the current. Look to see if anything else is moving with the current." "Yes, sticks, dead leaves, and the grass in the water is moved as far as its roots will let it go." "Where do the sticks and pieces of leaves move fastest?" "Near the middle of the brook." "What does that show?" "That the current is strongest in the middle." "The objects are moving down-stream. Point up-stream. What shall we call the ground that borders on the brook? Stand so that you can look down-stream. You all are on the left bank. Where is the right bank? How will you find the right bank of any brook? How will you know which way is down-stream? Which is higher, the right bank, or the left bank, of this brook?"

"Suppose a great rock should be placed in the bed of this brook, what would happen?" "The water would run up against it, and then go around it." "What would happen then?" After some discussion the children decide that the water would wear away the soft bank. "Is any part of this bank being worn away? Look and see. Run up and down the brook. See where the current is swiftest, and think why. Find places where the bank is wearing away. See if you find any rocks in the bed of the stream; any pebbles. How does the water appear as it runs over the stones? How do the stones affect the current? What do you find growing on the bank? In the water? What animals do you see? We will come again to watch them."

Add the brook to the map of the field. Indicate direction of the current, — right or left bank. Children write, first, what they remember, unassisted; second, answers to questions.

Commit to memory Tennyson's "Song of the Brook," or Sidney Lanier's "Song of the Chattahoochee." For further lessons, trace the brook back to its beginnings, study springs, and follow the life of a water-drop. This will involve lessons on vapor, clouds, rain and snow, soil and rocks, and the sea. Lead the thought of the children to the laws which are so beneficent, and which guide the raindrops and the brooks, and paint the colors of the rainbow. And lead them to associate with the brooks and the sea the thought of the poets, and the pictures in their poems. Encourage individual observation, and the use of pocket note-books.

Lead from the brook to the river, the pond to the sea, the hill to the mountain, the meadow to the prairie. By learning to interpret his own surroundings, the child gains power to picture other lands.

VI.

NUMBER.

IN teaching number, as in all other subjects, the method will be determined by the end in view, — the results which we hope to gain through our teaching. If we ask ourselves why we teach arithmetic, we may more readily determine how we should teach it.

The one aim which has been uppermost in the minds of most teachers has been the obtaining knowledge. This is but one of the results to be secured, but it is an important one. Through the arithmetic lessons the child should gain clear and accurate knowledge of all the facts of number which are needed in his daily life, in buying and selling, in reckoning obligations and in meeting them. A certain fundamental knowledge is indispensable for getting our daily bread. Further than this there must be taught the essentials of arithmetic which are necessary to the future study of mathematics, if the child continues his course in school. And further still, and quite as important, is the knowledge which is gained simply to afford discipline in the getting. Knowledge for daily use, knowledge for foundation of future study, and knowledge for discipline, should be obtained through the lessons in arithmetic.

But of greater value to the child is the power which becomes his through this knowledge-getting. If arithmetic is rightly taught, the child grows through the study in power of observation, power of thought, and

power of expression. All the primary ideas and truths of number must be obtained through observation; there is no other way in which they can be learned. The teacher who forgets this truth and endeavors to teach her child facts in number by simply causing him to reiterate her statements, is violating the fundamental principle, and without doubt fails to accomplish her purpose. Only through observation can primary ideas be obtained.

But observation is not enough for future acquisition of knowledge; the child's observation must be thoughtful. Through his first seeing he learns fundamental truths which should always lead him to think out for himself other truths which depend upon these. Unless the observation is thoughtful, the child's knowledge never extends farther than what his eyes can see. The individual fact which he perceives must lead the way to the general truth which he apprehends through reason; and his lesson in arithmetic should develop the power of clear and definite reasoning.

Added to the power of observation and thought should be greater facility in expression. The child's observation and thought are not complete until they have been definitely expressed. This expression may be by means of figures, words, or drawings; but it must be accurately made in order that the thought may be fixed in accurate form, and that the teacher may learn through this outward expression to measure the child's knowledge and power.

The continued work along these lines will give to the child the essentials of knowledge that underlie future work, and by means of the processes involved will fix certain habits of thought and study. These habits are

accuracy of observation, definiteness of thought, and clearness of expression. In written work this accuracy and definiteness involve neatness in arrangement also. There should be no dimness of idea nor vagueness of expression nor carelessness in record of the questions in arithmetic. All the statements should be clear and straightforward, all results and processes should be accurate; a habit of definiteness and accuracy should grow in every lesson.

The kind of lesson which the teacher will give must depend upon the end in view. A lesson to teach a new fact of knowledge will be given in one way, a lesson intended to fix the fact or to strengthen a habit or develop power should be given in another way. The teacher must clearly determine, before every lesson, just what she intends to accomplish through that lesson, and just how she intends to accomplish it. It is well for her to ask herself, as the class pass to their seats, what fact they have learned during this exercise, and she should be able to assure herself that certain knowledge has been imparted or certain powers have been strengthened by the exercise. A lesson for the getting of new knowledge, or a development lesson, involves presenting a new idea to the child. The element of observation predominates in all such lessons in the lower grades. If the child is to be taught the new fact that six and two are eight, or that four quarts equal a gallon, the objects must be presented to him and he must be led to see their relations. If the truth is new to the child there is only one way in which he can be led to see it, and that is by means of objects. He should be shown the six balls and two balls, the six pennies and two pennies, six rings and two rings, or he should see

the four quarts measured and poured into the gallon measure. Such a lesson is often called a development lesson. It should be necessary only in presenting new ideas, and it should be followed always by thoughtful drill in which the child has abundant opportunity to repeat and apply his knowledge. Having seen that one gallon equals four quarts, he can think for himself that two gallons are eight quarts. Having seen that six and two are eight, he ought not to need objects when he comes to the fact that sixteen and two are eighteen, or that twenty-six and two are twenty-eight. Every fact that he perceives in the development lesson should be made the basis of all the related facts that can be associated with it, and this association should be a part of the drill lessons.

Lessons for strengthening the power of thought and of expression and for fixing in the memory the pictures seen in the development lesson are drill lessons, and should supplement and complete the development lessons. The work in arithmetic is not complete without the two phases. It is a mistake to emphasize one to the exclusion of the other. Each has its proper place, and if the teacher clearly comprehends the purpose in each lesson she will more thoughtfully shape her method.

In all the development lessons the teacher should see that the pupils are prepared for the new truth that is to be taught. Everything upon which the new thought depends must be definitely in the mind of the pupil and clearly stated before the new thought is introduced. So the connection is fixed between the old knowledge and the new, and the lesson of to-day is related to the lesson of yesterday. Without such care-

ful relation the work is fragmentary and weak. The isolated, separate lessons involve much loss of time and energy on the part of both teacher and pupil. It is useless to attempt to teach a definition of a cube when the children do not know how to define a square; useless to attempt to teach the definition of a square before the children can recognize a right angle. See first that the ground is prepared for the new lesson and that all the facts relating to it are brought into the foreground by a careful and thoughtful review.

Again, the new truth should be properly illustrated. If it is a fact which the child can get through observation only, appropriate materials should be ready for him to observe. If the new truth depends upon the one learned yesterday, illustrative problems should be used and the old steps carefully stated so that the one to-day is clearly recognized in its place. See that the illustration illustrates simply the point to be taught in the lesson; see that the questions are clear and definite, impelling the child to accurate observation or definite thought; and see that every statement or observation or conclusion is accurately made.

Having led up to the observation of the individual instances, lead the child to compare this with other instances until the individual truth becomes general. He sees that six apples and two apples are eight apples, that six cents and two cents are eight cents, that six books and two books are eight books. He should continue this grouping with all objects which are familiar to him until he is ready to recognize the general truth that six and two are eight. But this individual statement with familiar objects should always precede the general statement.

The purpose of the drill, as has been stated, is to fix in the mind of the child the facts observed and to develop skill in application of these facts. In order to achieve this result, the teacher must test and question thoughtfully. She should work in the line of the child's need. Do not drill over and over again upon something which the child already knows. Nothing leads more surely to indifference and to slovenly habits of thought and expression. Lay stress upon the lines in which he is weakest. Know at the end of every recitation just what truths the child has in his possession, just what ones need to be presented anew, and what ones must be fixed by further repetition. Give the greater time to that which is more difficult. Let each lesson be a guide for the next, showing the teacher the lines in which she must work for the future.

In the primary work in number the child should fix in his memory, after proper development, all the fundamental combinations and separations which underlie the processes of addition, subtraction, multiplication, and division. These facts are few in number if the teacher knows how to group them. The tendency is to give much time to drill upon facts in the multiplication, omitting the addition, subtraction, and division, which are quite as necessary. There are addition, subtraction, and division tables, as well as multiplication tables, but unfortunately, the facts to be taught in these three lines are not so well classified in the teachers' minds. All the facts which the child needs to know in addition and subtraction are revealed in the study of the numbers from one to twenty. If the child masters these he has the key to all the rest; for example, when he learns that 2 and 7 are 9, he has the

key to the 12 and 7, which are 19; the 32 and 7, which are 39. Whenever he finds 7 and 2 to be added, in whatever order or kind of units, the sum is always 9. When he learns that 8 and 7 are 15, he is preparing the way for the 28 and 7, 58 and 7, 98 and 7, and so on. These tables of endings in addition should be as carefully observed and memorized as the common groupings in multiplication.

Again, every combination studied in addition teaches the fact in subtraction which is its complement. Since 5 and 2 are 7, 7 less 2 are 5, and 7 less five are 2; since 8 and 7 are 15, 8 from 15 are 7, and 7 from 15 are 8. Then 7 from 25 are 18; 7 from 95 are 88, and so on. All the facts ever needed in subtraction should be taught before the child has completed the study of 20. The largest minuend ever used in subtraction is 18; the largest subtrahend is 9. A little study will show what groups in subtraction will cover all the problems which the child needs to solve. These facts should be carefully presented, and repeated over and over until the results are absolutely memorized and the difference is stated as soon as the two numbers are compared.

A careful study of the groups of numbers known as the multiplication tables, will indicate the combinations which are most difficult for the pupils, and upon which most time and effort must be spent. In the early lessons the teacher should make very plain to the children the fact that the multiplication is a short statement and method of addition, and should teach him to build for himself, through addition, the products learned in the multiplication tables; but having learned to build this combination, and to prove its accuracy, the child should memorize the result, so that the product is

suggested instantly when the factors are named. All teachers recognize the fact that a few combinations present more difficulties to the pupils than any others. 8 times 7, 9 times 6, 9 times 7, 8 times 9, are among the number. The tens sing themselves through the memory of the children; so the elevens abide in the memory through their rhythm. The fives are learned in the same way. The wise teacher appreciates this fact, and singles out the difficult combination for careful development and thoughtful drill. Often the child's appreciation of the fact that these are difficult will whet his determination to master them. "Here is something hard to remember," the teacher says; "let us see if we cannot master it to-day," and the combination is built, is memorized, is applied in problems, and each child goes to his seat from the recitation with the consciousness of a new possession. Such emphasis on the hard places would do away with much of the teacher's repetition, which leaves no impression because it is so indifferently performed.

With the groupings of the even numbers in multiplication, should come the corresponding division. Since the 3 fours are 12, there must always be three fours in 12, or 4 threes in 12. One third of the 12 is 4; one fourth of the 12 is 3. These facts are but one, and should be learned as one. Again, in written multiplication and division, there is constant need of the power to hold in mind two results, — a product and sum in multiplication, a remainder and quotient in division. Thus in multiplying 25 by 6, the child must remember not only the 6 fives and the 6 twos, but the 6 twos plus 3. In dividing 150 by 6, he must not only remember the 2 sixes in 12, but must compare 15 with the

nearest multiple of 12, holding in mind the product and the remainder left after subtracting this product. Hence his drill on the fundamental combinations should include drill in these double lines. He should add to the even products, and divide where there must be a remainder. Such drill will do away with much of the difficulty common in written multiplication and division.

Added to these essential facts of numbers which underlie the four processes, must be the recognition of concrete units, and knowledge of the terms which must. be used in the simple processes. The child's knowledge of these units, — as the foot, the yard, the pint, the quart, etc., — must be gained in the first place through observation. In no other way can they be taught. It is not enough for the teacher to tell the child that three feet equal one yard. He will never know it until he measures for himself, and so makes the truth his own. He must separate the unit into equal parts in order to know the fraction. He must see, use, and name, the factors, the product, the divisor, the dividend, in order to deal definitely and easily with these terms and the ideas which they represent. These must be seen before being memorized by the child in his primary lessons.

As soon as the child has mastered these lowest terms of his work, he need not be confined to illustration, or to objects of any sort. The mental picture takes the place of the tangible object. It is a mistake to tie the child to splints or pegs after he has begun to grasp the real idea of number to which the use of the groups of objects should lead him. The teacher who has taught the child the combinations in numbers to 10 by

means of objects, should have tested in every number the child's power to see the combinations without the objects. That should be the first step in presenting the new number. If he is taking 8 for the first time, let her discover how much he can tell her about 8 from his knowledge of 7; and when she finds his idea is confused or dim, then let her bring the objects to the rescue. But not until then. If the child has in his mind the picture of the number, or if he can build this picture from what he knows of some other number, the material object is unnecessary. Use the object only when it is needed to make the number clearer to the child. Let him use it in order to prove to the teacher that his words express ideas, and that he understands their meaning, but do not hold to the form of using the objects when there is no need of their use.

Many of the processes can be best taught by the judicious use of objects. Subtraction, the carrying in addition, partition and division, reduction, should be made clear and tangible to the child by concrete illustration; but as soon as the child has recognized the truth that the illustration is intended to teach, the object should be done away with and he should depend upon the mental picture in his memory.

The number lessons should teach clear analysis and definite statement. To this end the teacher herself should think clearly and state definitely. Often the teacher's putting pointless and indefinite questions utterly prevents the child from thinking clearly. His mind is confused, befogged, because her thoughts are so vague. The teacher should develop in herself a power and habit of clear, logical, and definite questioning, and should demand from her pupils thoughtful answers to

her questions. "How many are 7 fives, Johnnie? asks the teacher. "30," Johnnie replies boldly; and the teacher kindly suggests, "You thought I meant 6 fives, did n't you, Johnnie?" "Yes 'm," the boy willingly assents. So she cultivates the child's habit of listening to *something like* what she meant to say, instead of hearing the exact question and answering it exactly. She accepts what she thinks he means to say, instead of what he actually does say. No definiteness of thought can come from such recitations. An equally fatal habit is that in which the teacher continually prompts and suggests the answer, doing the work for the child, putting the words into his mouth, suggesting the form of statement, and completing the broken sentences. Under such tuition the child becomes helpless, and his work is hopeless. The child should learn to think for himself, to speak for himself; his words should be interpreted as meaning just what he says and nothing more nor less. Such interpretation will do much to help him to clear and healthful thinking.

The object of the so-called analysis of problems is to lead the child to recognize the steps in his thinking and to clearly state these steps. The analysis should lead him to see the end which he attempts to reach, and to recognize the steps by which he attains it. Such thinking gives added definiteness to his thought and clearness to his expression.

The mechanical repetition of a form of analysis is of no value to the child. He must recognize clearly the conditions of the problem, and the process of solution which these conditions demand. His own statement

will express what he himself sees much more truly than will the teacher's words, while his willing acceptance of her formula makes her blind to his actual need. Until the child recognizes the exactness and beauty of the logical statement as it is phrased in the formula, let him hold to his own, working his way toward the clearer light.

An illustration may show more plainly the line of work which is most helpful to the child. The following is suggestive: —

A man paid $72.00 for a wagon and $8.00 for repairs, then sold it at a loss of $9.00; how much did he receive for it?

"What are you to find?" "I am to find how much the man received for the wagon." (Keep this end in view.) "What are you told to help you?" "What he paid for the wagon ($72), what the repairs cost ($8), and how much he lost ($9)." "What must you learn?" "What the entire cost was." "How can you learn that?" "By adding the first cost, $72, and the cost of repairs, $8, I find the entire cost $80." "What further must you find?" "I must find the selling price." "What have you to help you?" "I know that the selling price was $9 less than the entire cost." "How do you know that?" "Because he lost $9" "How will you find the selling price?" "By subtracting $9 from the entire cost, $80. The difference is $71, therefore he sold the wagon for $71.00."

Thus far the teacher and child have worked together, the teacher directing the thinking. The work is not complete until the child can solve the problem alone, and further state and solve all similar problems. His independent solution should be something like this: —

I am required to find the selling price of the wagon.

I know that the entire cost of the wagon was $72 plus $8, or $80. I also know that the selling price is $9 less than the entire cost. The selling price must be $9 less than $80, or $71.00.

The written explanation should be something like the following: —

Required: The selling price of the wagon.

Known: The first cost, $72, the cost of repairs, $8, and that the sum of these is $9 more than the selling price.

$72 plus $8 equals $80, entire cost.
$80 minus $9 " $71, selling price.

The child comes so slowly to the power to think consecutively and to state his thoughts accurately that we are often tempted to put the words into his mouth in order to hurry the desired result. But we do not hasten it by our impatience. We deter it. The child merely accepts our words; he does not think. And he fails to get out of the exercise any help toward thinking the next time. The best help which the teacher can give is to question definitely, logically, patiently, over and over, until the child recognizes the relation of the question and the need of the steps in the process. After he comprehends the conditions of the problem he should solve many others until his power is assured. But his power is complete, not when he can solve the problems classified as being alike, but only when he can recognize and read the conditions, wherever and however stated. Then the formula will not hurt him, for he recognizes the general truth; but then he does not need the formal expression, for he has become able to state the truth for himself.

In these few pages no summary of the facts of number can be given, nor of the processes involved in number work; but the aim has been to indicate a few of the leading and essential characteristics of good teaching as applied to number. These methods may be carried out in manifold ways, varied by the teacher's personality and skill, but the principles of the work abide the same. We may test our power to teach number by our pupil's ability to think clearly, to state definitely, to grasp new conditions, and by his absolute possession of the fundamental facts of number.

VII.

SEAT WORK.

I. PURPOSE AND DIRECTION.

IF we were to count the number of hours which the ordinary pupil spends in recitation during his school course, and the number of hours given to work at his desk, we should find that the latter is by far the greater part of his school life; and if this is true it ought to follow that the teacher's thought and care should be proportionately distributed between the class instruction and recitation and the occupation which fills the other periods. During these hours of "busy work," as they are called in the primary schools, the child ought to be fixing the facts and truths learned in the period of instruction, adding to the knowledge already gained, developing power in the lines in which he is working, and strengthening right habits of study. Too often the teacher's chief purpose in assigning the busy work is to keep the child quiet until the period of his next recitation. Too often she fails to give the needed thought to the preparation of this important part of his work and hers. The direction for his occupation at his desk is given on the spur of the moment, often after the class is called for recitation. The occupation has no relation to the work that has gone before or that is to follow. The materials are not provided, directions are not definitely given; and the immediate result is a deluge of

questions as to the work and the manner in which it is to be performed. Disorder and dissatisfaction result from such thoughtless ruling; but more serious still is the habit of indifference and inattention and of disorder that results from the long hours spent in profitless occupation, or in mischief which its assumed author is supposed to find for idle hands to do. Many a teacher might trace the indifference, inattention, and disorder of her school to this source. A child who is profitably occupied has few opportunities to disturb his neighbor; certainly his inclination to do so is diverted by the work in which he is interested. But the immediate difficulty in discipline is not commensurate with the hidden but fatal habits which are surely fixed in these profitless hours, and the loss of the knowledge to which the work of these hours should have led.

Every teacher feels it incumbent upon her to prepare a programme of daily recitations in order to facilitate her work. Without such an arrangement her work would be chaotic. She must have some order of procedure, and must adhere to that order. Through this arrangement the school work comes to move steadily and evenly toward the desired results. Such a programme is quite as necessary for the seat work. The children should know not only the time of the recitation period, but the work to be allotted in the study period. They should know the purpose of that work, and should direct all their energies to accomplish that purpose just as truly as in the recitation period. The best programmes show to the pupil the work for every period of the school day, including the seat work, and to the arrangement of this occupation the teacher should give her most careful attention.

The seat work should be related to the other lessons of the day. Too much time is spent in isolated work. There is a tendency in many schools to treat each exercise as if it were a unit by itself, with no relation to any other exercise. Through such isolation each exercise is shorn of its strength. No truth is complete without the truths related to it; no exercise is complete without the others which should be associated with it. Every step in arithmetic, for instance, depends on that which has gone before, and prepares the way for that which is to come; and the teacher who appreciates the relation of each part to the whole will teach most clearly and definitely and with the greatest economy of energy. There is no time to waste in the schoolroom. Every lesson should count in attaining a few certain great results, and every lesson assigned for study should have its place in the chain of lessons which leaves the child with a certain fund of useful knowledge, or certain powers and habits through which he can acquire such knowledge for himself. The lesson assigned for seat work should either afford the child an opportunity to gain new knowledge, or through varied repetition it should fix knowledge already presented, or its purpose should be to fix habits which can become assured only through the exercise thus presented.

To this end the teacher should have in mind just what she desires the children to do, just why, and just how to do it. She should be prepared with all the material necessary for the work, — pencils well sharpened and of suitable length, paper of proper size, ink free from sediment, pens clean and flexible, illustrations for the board work, needles and worsteds for the sewing, — everything, in short, which is needed for the work which she has

chosen. Further, she should prepare as well definite directions for the work. A multitude of questions that arise from the pupil's uncertainty is thus prevented, and the definite purpose of his work is assured. These directions should be clear and concise, and should be stated but once, clearly and concisely. Having the materials and understanding the directions, the children should lose no time in getting to work. The period should be a period of work, and not of listless dawdling.

To insure this, the work should be suited to the capacity of the children, and should provide occupation for the entire period. A question always arises here. Some pupils work much more rapidly than others, and will have their task completed when the others have hardly begun. To lengthen the task assigned to the entire class would discourage the slower ones. The only course which the teacher can adopt is to provide additional work for the quicker pupils, — books to read, or further work in the same line to be done. This provision should be made in order to prevent the brighter pupils from spending a part of the period in idleness and its attendant mischief.

Another ounce of prevention is stored in the proper distribution of materials. A little system in this matter prevents much confusion at the time of beginning the work. In the primary schoolroom as well as in the higher grades, the different children may help the teacher in this work and so help themselves to habits of order and system. It is well to spend some time in the beginning of the term in teaching the children how to distribute and collect material. The order should always be the same, in order that the process may be quickly finished and the work of the schoolroom may be disturbed

as little as possible. If cards are to be distributed they should be fastened in neat packages. The pencils should be kept in uniform boxes or on cards to which bands have been fastened through which the pencils may be inserted. The writing-books, the tablets, the pegs, the sewing material, should be distributed and collected in a certain order, if not with certain signals. The time spent in teaching this order in the first days of the term will be gained many times over in the added facility which results from this drill.

The work should be varied from day to day, especially in the lower grades. Variety helps to hold the interest of the pupils and so their attention, but though materials may differ, the purpose should be the same, and the materials in every case should be adapted to securing the one result.

The material should not only be varied from hour to hour, but also from week to week. The wise mother puts away some of the playthings of her children, to bring them out after a few weeks of absence, when they have all the charm of a new toy. The same principle operates in the schoolroom. In order to prevent monotony in the assignment of desk work and to insure profitable work, the teacher who is attempting this plan for the first time might well keep a note-book in which her programmes are written. Devices which are suggested by her reading, or by experience of her teacher friends, or by her own failures and successes in the schoolroom, should be chronicled therein, and with them a record of the work assigned from day to day. This record will help her to vary the programme and so hold the interest of the children.

The child should be taught how to do the work at

his desk just as he is taught how to solve the problem in the class or to use new material in drawing or science. This is especially true of little children. They should be taught how to handle the materials placed before them, the pegs, the splints, the worsteds, the sewing, the weaving. In written work they should be carefully taught the best arrangement of their work, and should be urged to make every exercise better than the preceding one. Such instruction when new work is presented, helps the child to make the best use of the materials placed in his hands.

A word as to the correction and supervision of seat work. How often the teacher, in the hurry and pressure of the day, calls a new class and says to the pupils who have been employed at their desks, "Clean your slates and write this new exercise," without a glance to see what work is to be erased from the slates at her bidding. The children have been toiling for half an hour perhaps, writing sentences, drawing illustrations, or copying words, and these are effaced with one movement of the sponge, with nobody to see that they have ever been written. What wonder that the child becomes careless and indifferent, that his writing is poor, his words are ill-spelled, that his drawing is indifferent, that pictures which his fancy pencils take the place of the work directed by the teacher. We would become indifferent and careless under the same circumstances. No teacher can afford to deprive herself and the children of the few moments needed for quick and clear-sighted supervision of the work. "But I have no time," cries the overburdened teacher. The truth is that the few minutes saved to spend upon the recitation of a part of the pupils, results in far less advantage to them than would

the same time given to the supervision of the work at the desk, for through the teacher's approval or criticism and through the knowledge that all the work will come under her eye, does the child acquire new earnestness and interest in his work and a habit of careful working. These are worth more to him than the knowledge he might gain in the time given to this direction on the part of the teacher.

This direction need not be detailed and minute. Passing rapidly through the aisle, the teacher glances from one desk to another; her practised eye sees at once that Johnnie has worked faithfully and well, that James has copied carelessly, that Susie has done better than yesterday, that Kate is untidy and careless; the word to the one and look at the other, a neat slate lifted before the class, a sign of approval worthily or truly won, a word that tells the school that the teacher is satisfied with the effort made, — these take but little time, but they achieve most important results. For such a prize the children will work diligently and faithfully, and in the working will learn habits of untold value to themselves. In this examination of the work the teacher should use great care in both commendation and reproof. Her word of approval will determine the line in which the children will work. If she commends neatness of arrangement they will work for that. If she commends rapidity, they will strive for that. If she singles out one slate as the "best in the room," that honor will be the one desired. It is most important, therefore, that she should approve the qualities that she desires the children to gain. Her comment should never be, "Michael has done better than Timothy," or "John's slate is the best in the class."

Michael should be compared with himself and what he did yesterday. John's work should be measured in the same way. "All the class have done their best," should be the most welcome reward which she could bestow. The teacher should encourage in the children the delight in good work, whoever accomplishes it. The spirit of rejoicing in the successes of another, and the determination to outgrow the work and power of yesterday — the spirit of her criticism and the words in which she phrases it will do much to determine this ideal on the part of the children. She should approve neatness, endeavor, spirit of the work, obedience to instructions. The work that covers pages but is illegible, the work which is acknowledged to be less than the child's best, the work which was done unwillingly or carelessly, the work which does not fulfil the teacher's instructions, should never be commended; but the child who tries to do just what he is told to do, loyally, faithfully, as well as he knows how, should be approved even if but one sentence out of ten is complete or the entire page is undecipherable. Quantity should be the last item to win praise. Accuracy and adherence to the ideal should be praised before despatch. The work should be done as rapidly as possible, but it should first be well done.

In assigning seat work, the teacher should be sure that the work can be completed in the given time, with reasonable diligence. If she assigns work that can never be completed by the children, so that every day the unfinished results must be accepted, they will naturally become indifferent. "Write all you can about China," is a subject for an afternoon, not for fifteen minutes. It would be better to give a few definite directions instead,

outlining work which the pupil can complete. This habit of finishing the work is one worth gaining.

The desk work of which we have been speaking has included written work, or that involving the use of materials alone, but the child must form right habits of study, must learn to get thought from books; and part of the time spent at the desks in early school life should be spent in learning how to study. It is a mistake to put the book into the hands of the child with the direction to study the lesson, when he has not learned what study means. He should be taught how to get the thought from sentences, and must be directed first to define that which he is to get. Before asking the children to study the reading lesson they should be taught to get certain facts from it, — not, "Read the lesson ten times," as is the common direction, but, "Learn where John went. Find out who he was. Tell me what he found, and what he brought home. Write down all that John did. Write everything that Kate said. Write all that you learn about the horse, the farm, the house," etc. These directions may be increased until the child learns to study without them, mastering for himself the fact expressed on the printed page.

II. SUGGESTIONS FOR SEAT WORK.

I. Related to Reading.

1. For word study in Primary classes write lists of words which will rhyme with the one used as pattern upon the board, as "sing," "block," "when," "track." Instead of writing the words upon the board the teacher may use cards upon which the type words have been

written. In all such exercises, insist upon neatness of execution. The words should be written in columns, with an even margin.

2. Provide each child with an envelope or a small pasteboard box. As new words are developed in the period of word study, write these words upon small pieces of paper or card, and give them to each child to keep in his envelope or box. He will thus be provided with a vocabulary for which he is responsible. This can be used in various ways. With his words he can make some sentence chosen from the reading lesson, and then may copy it upon slate or paper. He can make lists of words beginning with a certain letter, or lists containing a certain letter. He can select words which are names of objects, and draw pictures to illustrate them.

3. Cut paragraphs from old readers or newspapers. Provide the children with pencils and paragraphs, and require them to draw a line under all words which they recognize, and then to copy these words in columns to be read to the class later.

4. Procure sheets of cardboard containing the letters of the alphabet. These may be bought at any school-supply company or prepared by a printer in the neighborhood at slight cost. Place the letters in boxes or envelopes. It may be well to number the letters belonging in each box so that the child may easily retain his share. With these letters he may reproduce lists of words or sentences from the blackboard or Reader. It is better in using this material to require the child to copy some definite form rather than to allow him to make what sentence he pleases. He will thus work to some definite end.

5. In the transition from script to print, use pages of

an old reader which have been pasted upon cardboard or manilla paper in order to make them stiff enough to endure handling. Cut them into words or sentences; write copies of the same story, mounted in the same way and cut, placing both script and print in the same envelope; require the child to build the sentences with both script and print.

6. Prepare cards containing drawings or pictures of common objects, as box, ball, top, fan, and require the child to copy the pictures, writing the word underneath.

7. Write sentences which may easily be pictured, as The ball is on the table; There are two eggs in the nest; The bird is on the bough; The tree grows by the brook; I have two hands; John has a toy balloon. Require the children to copy the sentence and to express the thought by picture.

8. Read a short story or poem to the children and ask them to picture the scenes which the poem describes. "The Envious Wren," a short poem found among those of the Cary sisters, is well suited to such reproduction. So is the story of "Little Bell." Some of the scenes described in the Memory Gems may be thus pictured. Such exercises strengthen as well as test the power of imagination. Illustrations of such work will be appended to this chapter.

9. Copy sentences from the reading lesson. In such copying, insist upon neat writing, careful placing of capitals and punctuation marks, and look to see that each succeeding line is better than its predecessor.

10. Write lists of words upon the board, selecting those needed in language, reading, or general lessons, and require the child to use them in sentences. These sentences should invariably mean something. Not, I

see a cat, but, A cat has sharp claws. Not, This is a primrose, but, Our primrose has blossomed.

11. Select from a certain lesson in the Reader and copy words of one syllable, words of two syllables, etc.

12. Write lists of words containing the same syllable, or derived from the same word, as *call, calling, called, caller*, etc. Write upon the board questions which outline the story of the reading lesson, as Who was John? Where did he go? What did he do? What did he learn from this? And require the child after reading, to write the story in answer to the questions, making paragraphs in accordance with the topics suggested by the questions.

13. Copy sentences from the reading lesson, substituting synonyms for words which the teacher underlines.

14. Use appropriate adjectives to describe nouns which have been selected; as, Iron is hard, Glass is brittle, etc. These words need not be known as adjectives and nouns. Very young children may do this work.

15. Reproduce the story of the lesson if not too long to be completed in the time allowed for the exercise.

16. Memorize and write from memory a stanza or paragraph which is worth committing to memory.

II. Seat Work related to Number.

1. Use pegs, corn, beans, melon-seeds, buttons, or wooden toothpicks. Provide a bag or box for each child in which these may be kept for use as counters. Use them in illustrating the combinations and separations taught.

2. Make dominos of cardboard, leaving the sides blank. Let the child complete the number studied with buttons, beans, or lentils.

3. Paste calendars upon sheets of manilla paper or cardboard in order to make them stiff, cut into squares containing the figures, let the children place the numbers in order, or place groups of objects upon one side of the domino and the corresponding figure upon the other.

4. Have figures printed upon cardboard in quantities. These may be obtained of the same source as were the alphabet cards. Use them for illustrating problems which the teacher places upon the board. These should not be needed beyond the first year of school.

5. Picture the conditions indicated by the problem. See that the picturing represents the exact condition stated. Five birds were upon a tree, and two flew away; how many were left? In this picture the first scene should represent the first grouping, the five birds upon the tree; the second picture should represent the three left upon the tree, with the two flying away. Such picturing ought to lead to power to imagine the conditions of problems. It is lack of this power which often keeps the child from solving his problem. The teacher should be sure that the child understands the conditions which demand certain steps in the solution of the problem. Too often he adds, subtracts, multiplies, or divides simply because he is told, without any perception of the reason for the process. The picturing should express the thought accurately. In the problem Mary has three cents and John has five; how many more cents has John than Mary? the three cents and five cents should be placed side by side, plainly showing that John has two cents more than Mary. In the problem, John had five cents and gave Mary three; how many had he left? the five cents should be represented first, and the

three which John gave Mary out of the five should be cut off, showing the two that are left.

6. Find in the garret or buy at a second-hand book store copies of old arithmetics, cut from the pages problems suitable for the class, paste upon the backs of cards, and distribute to those pupils who finish their work before the others.

7. For little children cut different-colored worsteds into short lengths, ask them to assort the colors, placing a certain number of threads in each group.

8. Supply the children with paper and scissors; let them cut the paper into equal lengths and make into chains, using a required number of links of each color. These chains can be used afterward for decorating the room, making sash curtains, etc.

9. Provide beads or buttons for the children to string, requiring them to use a certain number in each group. In such exercises it is better for the child to separate the beads or buttons into the required groups before beginning to string, to prevent too continued counting by ones. The Kindergarten beads made in the form of cubes, spheres, and cylinders are useful but more expensive.

10. Cut from paper or cardboard circles of the size of a five-cent piece; upon these place groups of dots or stars, let the child assort the circles, placing together those which have the same number of dots.

11. Cut squares of oilcloth or of leather into half-inch strips, leaving an uncut margin of a half-inch at both ends. Let the children use colored splints and weave a required pattern. This will emphasize number, color, and arrangement.

12. Provide cards having upon them pictures of

groups of objects, and require the children to make problems which the numbers of objects suggest.

13. Copy and complete domino cards, especially with numbers that make ten.

14. Construct, draw, and cut oblongs having given measurements; use the square inch as a unit. Measure objects in the room and write statements of the result.

15. Draw and cut circles and squares, and fold them into fractional parts. Show the fractional parts of groups of numbers.

16. Construct a dial for marking time, placing the hands to denote a given hour.

17. Use wooden toothpicks, fasten bundles of pens with rubber bands in teaching first steps in addition and subtraction; illustrate the results.

18. Prepare cards containing equations showing the combinations and separations of numbers which the child has studied. Omit some part of the equation; require the child to complete, and to state also in the ordinary form required in the four processes. This form is better for constant use because it is the one which is repeated in all his later work.

19. Write the analysis of problems in order to lead to more distinct perception of the steps. Do not demand a certain formula, but rather a clear statement of the process.

III. Seat Work requiring observation of form and color.

1. Cut cardboard into different forms: circles, squares, triangles, etc. Ask the children to match those which are exactly alike; then to select all squares, all circles, etc.

2. Provide small squares of thin manilla paper. Make

the impression of a circle or square by means of a spool, cylinder, or tube; cut the forms from the impression; arrange and paste.

3. Represent upon the blackboard. Make paper chains, such as were suggested in number work.

4. Represent upon the blackboard a slate with various objects grouped upon it. Ask the children to reproduce, showing accurately the number and position of the objects. It is interesting to require this when the pupils first enter school, and to repeat the exercise a month later, comparing results. The later results will, without doubt, show marked growth in the power of observation. Remember that this power helps the child to learn to read.

5. Assort the letters or figures with which the children have been provided; put together words that are alike.

6. Make a large chart of manilla paper, drawing upon it with a rubber pen forms which the children may copy with pegs, splints, lentils, or in drawing. These forms should be simple, and should be related to the drawing lessons or nature study. The chart may, of course, consist of any number of leaves.

7. Cut circles, squares, etc., from colored paper; arrange in designs for borders or rosettes, and draw.

8. Provide material for sewing the outline of forms studied in drawing, groups used in number lessons, or objects described in the nature study. Stout manilla tag-board may be procured at slight expense for this purpose. Many school-supply companies provide outlines dotted for sewing. The cards can be made by the teacher, however, by the use of a hectograph. The patterns thus arranged will be more closely related to the work of her own classes. Use chenille needles, which

the children can easily thread, and split zephyr worsted of appropriate colors. The writer has seen children supplied with such material at a total expense of three cents each for the term. After a little practice the children will be skilful enough to thread their own needles, match the colors, and to make nearly all the needed preparation for themselves. The sewing may then be profitably used when the little hands are tired with writing and the teacher is occupied with other classes. The patterns selected should be those which suggest some thought in the other lesson, — the sun, moon, stars, windmills, and boats; snowflakes when the children are observing natural forces; the horse-shoe when they study "The Village Blacksmith;" the Esquimau hut, sled, and implements, or the bow and arrow, wigwam and canoe of the Indian when these people furnish the theme of the general lesson. Outlines of leaves, blossoms, and fruits should accompany the plant lessons.

If the outlines are neatly sewed the card should be made into some article of use; a book-cover, an envelope for holding papers, a book-mark, a court-plaster case, napkin-ring, pin-tray, and basket are among the many articles which the children can easily fashion.

9. Modelling in clay and sand is a most helpful means of strengthening and testing the power to see form. A table with the rim raised two or three inches and filled with clean sand will afford hours of profitable work for the little ones. The forms they have studied may be modelled here, — the village street, the meadow, the brook, the Esquimau hut, the cave of the winds, the sand-rimmed pickerel-pond. The plastic clay may be used at the desk; provide oilcloth mats upon which the

children may work. Let them model, not only the geometric forms, but also the natural objects which they study, — the apple, the peach, the pear, the plum, as well as the ball and the box. The attempt to express in a visible form what the child has in his mind leads to closer attention to form, and results in a more definite mental picture. The power to use materials leads to a feeling of independence. All work in construction is valuable for these reasons.

IV. Seat Work for older Classes.

As the children become more accustomed to study of books, they need less varied material for expression and are able to endure longer periods of work in the same lines. The seat work for these classes will be chiefly confined to study of books, writing, drawing, and arithmetic. Reproduction of the history, geography, and arithmetic, drawing maps of designs and illustrations of the thought expressed in the reading or general lessons will afford all necessary practice and sufficient variety. To these may be added the sewing and sloyd, and the drawing associated with them. Great care should be taken to link this seat work to the various lessons of the day, making it afford practice in the lines where the child most needs drill, and demanding the exercise of his different powers. The reproduction of the history lesson, for instance, may be in the form of simple narration or in letter form, or the child may imagine himself as the chief actor in the scenes which he describes. The description of the plant may be written in full or represented by drawing. The map as well as the description and letter should record what the child learns in geography. Do not

forget to allow some period for silent reading, in which the child learns for himself what books have to give, and prepares to tell others what he learns.

In all work at the seats, insist upon attention and diligence, with no waste of materials or of time, prompt action without dawdling, and independent work without copying or interference with one's neighbors. Make every lesson tell in right habits of work.

VIII.

TALKS ON SCHOOL SUBJECTS.

I. MOODS AND MANNERS.

IT may be worth while to leave for a moment the discussion of methods and principles, in which our teachers are doubtless well versed, in order to think of other factors which enter into school work. Among these are the moods and manner of the teacher. Though they cannot be easily classified, nor defined, nor cultivated according to set rules, nor modified by the most careful prescriptions, yet they have much to do with the happiness and progress of the pupils, as well as with the teacher's success. A knowledge of their "whys and wherefores" is as essential as the study of subject-matter, or command of devices to illustrate the facts taught. The way in which we say a thing is often more potent than the thing we say. We all know people whose manner wins for them scores of friends, and others for whom their nearest friends need constantly to make the excuse, "Oh, you must n't mind what she says. She means it kindly. It is her way." Strange that these unfortunate "ways" are so common that we forget to use the expression in speaking of manners that are kindly, or thoughtful, or courteous.

These "ways" bear the same fruit in the schoolroom that we find in the outside harvest. Some teachers arouse all the combativeness in a child's na-

ture by the tones or gestures employed in the slightest command. There is a "Do this" which arouses every fibre in the boy to say, "I won't!" There is a "Do this" that causes him to bend every energy to the willing accomplishment of the teacher's purpose; there is still a third, which leaves him in utter indifference, and which might as well — yes, might better — have been left unsaid. The commands — rather, the words of the commands — are the same; the results are very different because the teachers' ways are different.

There is the manner which repels and represses; there is the opposite which wins and attracts. There is a noisy, boisterous manner, which is often misnamed, the hurry and flurry being mistaken for enthusiasm. A school will be stirred and excited by such a manner, but never strengthened. There is a serene, even bearing, which implies reserved strength, which is cheerful while it is dignified, which inspires a true enthusiasm in a school. There is an assumption of command which is weak; there is a kind of request which always implies obedience. And all that the manner implies, the children feel. "Actions," the old proverb tells us, "speak louder than words."

Nor should we disregard the little tricks of manner which pass so easily into habits. Snapping the fingers, pointing, tapping the pencil, saying "Quietly!" with every movement of the class, asking automatically for attention, appending "Yes, go on," to every fragmentary statement which the pupil makes, adopting the "schoolroom tone," acquiring the questioning "Yes?" — all these, with their kindred, are flaws which we should be glad to miss.

The teacher's manner, as first illustrated, is usually

persistent. There is a manner which varies with the mood. Bright and sunny one day, perhaps because of special rest or unusual health, the teacher inspires her class, and all goes well. Hurt, sad, or depressed some other day, from causes outside the schoolroom, she shares her depression with the pupils, and all goes wrong. She is happy, and the children sing, mistakes seem trivial, faults are lightly reproved. Her head aches, and she is weary; the classes are dull, errors abound and are inexcusable, and offences are severely punished. Her spirits are buoyant, and the work goes on wings; she is heavy-hearted, and the school is a dead weight.

What then? Surely the schools, and all the boys and girls in them, are happily or wofully affected by something in the teacher, shown by her manner, or "way." If the power is for good, we all would win it; if for ill, we all would shun it. Is this something that we can learn?

It must be. We should be ashamed to confess that we had so little power of self-control that we could not overcome any defect known to be a defect, nor grow toward a good recognized as a good. If there is something in our manner which hinders our pupils and retards our work, we can at least try to banish it. If our moods shadow the bright faces of our pupils, and lead us to pronounce unjust decrees, we can control our moods. The responsibility once acknowledged, we cannot be released from it. The weakness being known, we must improve. The better way being shown, we must walk in it.

But how can we overcome that which seems almost irradicable, it has so become a part of us? By knowing our faults, first. Some of us are blessed with friends

"made open-eyed to all our faults." They may be the power that will —

> "the giftie gie us
> To see oursels as ithers see us."

Some of us know without the telling, having a true inner sense to be relied upon in such matters. But beyond this, we must study and try to realize a high ideal of a manner that is reposeful, serene, and womanly. Let it be the expression of a true, gentle, womanly spirit. The purpose to give our truest service to the children will help us to control the moods which would hinder that service. With right ideals, honest purpose, and patient effort, we must grow.

II. FOR MONDAY MORNINGS.

So many exercises in language, so many lessons in reading, so many "cases" in arithmetic, so many maps in geography, and so many words to spell, *plus* the human body lessons, *plus* the general lessons, *plus* the writing, drawing, music, and gymnastics! The school programme is full. We look from Monday morning across into Friday afternoon, draw a long breath, and wonder if we can teach in five school-days the week's appointed fraction of all that the course of study requires. The desired results are so many, and the minutes are so few!

And yet the course of study chronicles only a small part of the responsibility that rests upon us. We are to teach reading, language, and arithmetic, to be sure; but, teaching them, are to lead the children to something better worth the knowing than any of the three.

The lessons in addition and subtraction must help to something higher, or they may as well never be taught. An old lady once told me that her mother would not allow her children to learn to write, because she knew of great harm that came once through an untruth's being written. Though the prohibition seems on the face of it unwarrantable, careful thought will discover in it a germ of good sense. Unless the children could be taught what to write, they might as well not write at all. Unless our school work results in more than the course of study seems to suggest, much of our teaching will have been in vain.

What more? Such habits of thought, of feeling, and of choice, as shall tend to right living; high ideals and earnest purposes, as well as the knowledge of processes and the power to solve problems. Through wise teaching, and by force of good example, these ideals are fixed, these purposes developed, these habits strengthened. And because they are relatively of so great importance, it is wise to steal (or take) enough time from the regular programme of school affairs to give to work bearing directly upon these results. If all our teaching tends to strengthen the habits of honest work, can a talk about honesty be out of place? If our aim is to help our boys and girls to be upright and truthful, will not a sincere expression of our own ideal help in some measure? Can we not afford to speak occasionally of that which is greatest, when we have so many words to spare for that which is least? Then why not add to our programme a few minutes which shall be definitely given to moral teaching, in which the attention of the children may be called to the qualities which enter into useful lives? And why not take this

time on Monday morning, so that the week may begin with a good thought and a right motive?

A paragraph from a newspaper, a fragment from a life-story, a schoolroom incident, a few lines of poetry, may furnish the theme. A short talk is better than a long one; a talk with the pupils far better than a talk at them. Earnestness will make amends for lack of eloquence. A direct application of the truth taught may be made in the every-day schoolroom work. The "preaching" will be effective if it goes hand in hand with the practice.

A good illustration for such lessons is one whose theme was the story of the drawbridge keeper, which has been told as follows: —

"History and poetry celebrate no sublimer act of devotion than that of Albert G. Drecker, the watchman of the Passaic River drawbridge, on the New York and Newark Railroad. The train was due, and he was closing the draw, when his little child fell into the deep water. It would have been easy enough to rescue him, if the father could have taken the time, but already the thundering train was at hand. It was a cruel agony. His child could be saved only by the cost of other lives committed to his care. The brave man did his duty, but the child was drowned. The pass at Thermopylæ was not more heroically kept. Sir Philip Sidney, giving the cup of cold water to the dying soldier, is not a nobler figure than that of Albert G. Drecker, keeper of the Passaic Bridge."

The story is also told in verse: —

"Drecker, the drawbridge keeper, opened wide
The dangerous gate to let the vessel through;
His little son was standing by his side
Above Passaic River, deep and blue,
While in the distance, like a moan of pain,
Was heard the whistle of the coming train.

"At once brave Drecker worked to swing it back,
The gate-like bridge, that seemed a gate of death;
Nearer and nearer, on the slender track,
Came the swift engine, puffing its white breath;
Then, with a shriek, the loving father saw
His darling boy fall headlong from the draw.

"Either at once down in the stream to spring
And save his son, and let the living freight
Rush on to death, or to his work to cling
And leave the boy unhelped to meet his fate;
Which should he do? Were you, as he was, tried,
Would not your love outweigh all else beside?

"But Drecker, being great of soul and true,
Held to his work and did not aid his boy,
Who in the deep, dark water sank from view;
Then from the father's life went forth all joy,
But as he fell back, pallid with his pain,
Across the bridge, in safety, passed the train.

. . . . . .

"He is most noble whose humanity
Is least corrupted. To be just and good
The birthright of the lowest born may be.
Say what we can, we are one brotherhood,
And rich or poor, or famous or unknown,
True hearts are noble, and true hearts alone."

The story was told to the children. (Story telling is much more effective than story reading, in such lessons.) Their interest was aroused at once, for the story appealed to the best of their natures; and furthermore, it was true. Under the teacher's wise direction they discussed the story, described the drawbridge, outlined the duties of the keeper, talked of the trust reposed in him, and the promise tacitly made when he accepted his work. It was easy to lead them to see

that faithfulness to his trust, when the cost was so great, could only come out of constant loyalty in the every-day work. Some one spoke of the words that nerved so many English soldiers to bravest self-sacrifice: "England expects every man to do his duty." The boys liked that; and one of the girls suggested the familiar words that seemed now to have new meaning: "He that is faithful in that which is least is faithful also in much." These words were written on the board for a guide in the week's work. "Do the duty that lies nearest," was chosen for another board. The pupils begged to be allowed to copy in their blank-books the story of the heroic gatekeeper. That became a language lesson. And from Monday to Friday, — who knows how much later still? — the thought of the Monday-morning talk bore fruit in loyal, faithful work.

III. THE SCHOOLROOM ATMOSPHERE.

School A and School B are in the same quarter of the village of Smithtown. Both are provided with excellent teachers and good buildings. The children come from neighboring families. The school board furnish equal facilities in both schools for training the young idea. Yet their work is very different, and the results are different as well.

In A, the children work with might and main, — a good thing to do. One knows, without being told, that there is a great deal to be done, and very little time in which to do it. There is hurry, and tension, and pressure. The teacher's attitude speaks it; her manner

impresses it; her voice gives it emphasis. Every movement, every direction, seems to say, "Hurry up." 'John, don't you know we must finish fractions this term? And here we are only in addition, and you are likely to take the whole morning in explaining your problem," is the message conveyed by her glance at the boy who is at work in the arithmetic class. The entire school hears the key-note, and responds according to capacity. They hurry to the recitation, they hasten back to their seats. Their very slates catch the spirit of the occasion, and tumble to the floor in their eagerness to be ready at the proper moment. The teacher's brow knits at the signal; the children recognize the fact, and hurry with renewed zeal to make up lost time. There is much to be done and life is short.

School B moves on in different fashion. A casual observer might question whether it were really moving. There is neither bustle nor confusion. The teacher works serenely, as if with the consciousness that with every appointed labor there is likewise an appointed time. The children share her serenity, and work quietly. Yet they work, nevertheless. Every moment counts, every direction is full of meaning. No words are wasted, no work is carelessly done. But there is no sense of hurry in the room. There is time for songs, for gymnastics, for reading. Nothing is said about the work to be done to-morrow, until to-day's work is done; and to-day's work is done to-day. I have heard it said that at examination time, — the dread period which overshadows all the hours spent in schoolroom A, — the work is no better done than in schoolroom B. One who knows tells me that the children of the first school fail oftener than do the pupils at B, — but why?

The atmosphere of the two rooms is essentially different. The first contains the elements of failure; the second, of success. The pupils are spurred to highest tension in the one; they are held to steady endeavor in the other. In A the haste is in itself a confession of weakness; in B the serenity betokens reserved strength. The one teacher trains her pupils to impatience; the other cultivates peace.

Does it matter, this radical difference? For the difference is seen not only in Smithtown, but wherever American children are taught. And schools where the high-tension atmosphere exists are not, perhaps, in the minority. Does it tell in "results"?

Its effect can be easily seen in the school discipline. Any tendency to nervousness or irritability, however latent, is speedily intensified. The schoolroom grievances which have their root in impatience or lack of self-control, are multiplied, and the calm, even judgment that looks fairly at all sides of a question is lacking. The very quality that bestirs the uneasiness is at variance with the methods which alone could subdue it.

Again, the working power is diminished, because not wisely used. For continued work an atmosphere of excitement is not wholesome. Strength comes, not with attempting with great exertion tasks too heavy for us to accomplish, but in repeating again and again labor that lies within our power. No one questions that the workman who labors steadily and serenely in tasks fitted to his ability endures longer than the one who worries over burdens beyond his strength. To know how to use our strength to best advantage is better than to use twice the power in ill-directed effort. The quiet, well-planned

work of schoolroom B must bring better results in working power than will the hurrying zeal of schoolroom A.

The knowledge gained is none the less sure where the path is traversed step by step, rather than by leaps. The associations that cluster about it are wholesome, peace-giving. The ideals are higher when the thought is on the growth that comes of patient labor, rather than on the knowledge to be gained in a given semester. The habits of work, of thought, of life, must be more vigorous and more sturdy than those which are the outcome of anxious haste.

We may well hold before us, in our teaching, strong, steady, quiet work as an ideal, and strive to make our practice attain to it. The remedy lies largely, as does the fault, with the teacher herself. She can plunge her pupils into hurry and worry, or she can lead them through honest work into paths of peace. She can fasten their eyes upon the answer to the present problem, or make them glory in the conscious strength that comes of patient labor. She can choose patience instead of fretfulness, growth instead of per cents, cheerfulness instead of worry, vigor rather than excitement. The children will follow where she leads.

IV. THE PROGRAMME.

The routine of the schoolroom work, the every-day order of doing things, demands careful forethought on the part of the teacher. Her arrangement of work may insure friction, disorder, and loss of energy, or it may go far toward preventing these misfortunes. The fol-

lowing suggestions may throw some light upon the making of the programme, at least to those teachers who have not already learned by experience how to overcome the difficulties involved in the subject.

There should be a carefully arranged programme for every day's recitation and study, and this programme should be faithfully followed. "A time for everything, and everything done in its time" is as vital a principle of order as "A place for everything, and everything put in its place." The regular recurrence of certain exercises at certain times of the day helps to fix the habit of punctuality, to ensure careful preparation, to provide for every subject its appropriate time, regardless of the preference or delay of teacher and pupils, and further, saves the time and energy which would be lost through haphazard plans and lack of preparation. Every child in school should know just what he has to do, and when and how he has to do it. If the blackboard is needed for other things the programme should be plainly printed upon a sheet of heavy paper, and posted where it may be easily seen by all pupils and visitors. A small copy should lie upon the teacher's desk. The older pupils should copy upon a card their own order of exercises.

The programme having been outlined and understood, it should be carefully followed; otherwise it is useless. An exercise named for a certain hour and minute should begin at that moment, and should close as promptly. Pupils and teacher should form the habit of being ready at the appointed time. If the programme is familiar to the pupils, this preparation should be made individually and quietly, without direction from the teacher. The tap of the pencil or the word to

the class should be sufficient signal on the part of the teacher. Every child should understand the part belonging to him without further directions. The repetition of "Quietly!" "Carefully!" and the like, is worse than useless. It begets indifference. The habit of the class should be that of quiet and care-taking. This should be taught in the beginning, and expected in every movement, without repetition of the requirement. If attention is given to the details of turning, standing, and movement, as has elsewhere been said, the wheels of the programme will be well oiled, and will therefore run easily.

It goes without saying that a programme may need to be reconstructed several times to fit the needs of a school. The teacher should be prepared the first morning of school with an experimental programme which will be modified as she finds occasion. But even this programme should be carefully followed so long as it stands for the order of the day. The habit of regularity can be developed in no better way.

The making of the programme presupposes thoughtful grading of the school, and grouping into classes. The number of pupils in a class, and so the number of classes, will depend upon the age and ability of the pupils and the power of the teacher. When children first enter school a recitation period of ten minutes is long enough. They have not grown to the power of continued attention. Such classes may be taught in small groups, since the period is short, and there is time for more recitations. As the pupils grow in power of attention, and the teacher grows in her power to hold the attention of many pupils at once, the divisions may be larger and the periods longer, until the school is

divided into two equal divisions, having lesson periods of fifteen or twenty minutes each. With such a division of pupils, many exercises, as Music, Drawing, Writing, Language, and General Lesson, will belong to the school as a whole, division being made for Reading and Number, only. This arrangement can easily be made in schools of one grade. It allows all pupils some opportunity for individual preparation of lessons, and at the same time permits the instruction of the entire class together whenever new points are to be presented.

In all programmes, the exercises should be so arranged as to afford variety. The child's interest and attention flag if held too long to one kind of work. Writing should alternate with book study, number with drawing, physical exercise should follow work involving little movement. Music should break the monotony of quiet study, recess should permit entire relaxation and recreation. In providing seat work, this matter should be considered, and variety of occupation should be provided. A table at which the pupil may stand to cut, paste, model, or arrange forms, allows little children the freedom of movement which they need. Work at the blackboard also affords opportunity for variety in position and movement.

Simple physical exercises in the intervals of the programme rest the tired muscles and freshen the schoolroom atmosphere. Let the little children run, fly, or skip to their seats, sometimes making the circuit of the schoolroom. Let the entire school clap their hands, stand upon their feet, upon their tiptoes, stretch their fingers, shake their hands, whenever the air becomes heavy and the class listless. A stanza from a merry

song helps at such a time, — a bright story or a hearty laugh; children will turn with new and heartier endeavor to their work after such a movement of rest and recreation.

The seat work has two general aims, — to prepare for the coming recitation, or to repeat and apply a truth learned in the preceding one. The programme should prepare for both the preparation and the drill, affording appropriate periods for each. In primary classes the latter will predominate, as the new ideas are in most cases presented by the teacher in oral instruction. After careful study *with* the teacher, the pupils learn how to study alone the new lessons in spelling and reading. To these their study of new work is chiefly confined.

The repetition of language or general lessons and the application of new knowledge in number, should follow the period of oral work in those subjects; the study of the reading lesson should follow the period of oral word study and precede the reading.

Although no period is allotted in the programme for the correction of seat work, it should not be forgotten. Some of the written work can be discussed in the appropriate recitation period. The classes may be dismissed a moment before the next period opens, and a swift yet careful glance may be given to the work arranged upon slate or desk. A word of caution or approval, when the child is still in touch with his work, counts more than ample criticism when the time has passed. We have spoken elsewhere of the preparation, distribution, and commendation of work at the seats.

The discussion of the programme is not complete with-

out some reference to the teacher's preparation for her work. The daily preparation for the lessons of the day ensures the effectual moving of the programme and the success of the school work. With inexperienced teachers, this preparation should be even minute in detail. The writer remembers a day-book in which items were entered daily, during and after class exercises, in the order of the programme. "Bring pictures to show mountains." "John S. fails on 9 times 7." "Prepare spherical objects for drawing." "Review all words studied this week." "Look up Whittier's 'Boyhood.'" The pages of the book became a record of the work of the class, and afforded a basis for reviews. The memoranda helped in the detailed preparation of the lessons, and so prevented the hurry and confusion which result from lack of preparation. They helped the teacher to fulfil her many promises to the pupils and thus to hold their confidence. And they went far to secure the interest and attention which are accorded to all lessons which speak a fresh and thoughtful preparation on the part of the teacher.

PROGRAMME FOR SCHOOL OF THREE CLASSES.

First or Second Grade.

Time of Class.	L'gth of Period.	Class I.	Class II.	Class III.
9.00 to 9.20	20 min.	SONGS AND GENERAL LESSON.		
9.20 to 9.35	15	READING.	Gen. Lesson.	Gen. Lesson.
9.35 to 9.50	15	Reading.	READING.	Reading.
9.50 to 9.55	5	PHYSICAL EXERCISES.		
9.55 to 10.10	15	Gen. Lesson.	Reading.	READING.
10.10 to 10.30	20	WRITING OR DRAWING.		
10.30 to 10.45	15	P.		
10.45 to 11.00	15	NUMBER.	Number.	Form.
11.00 to 11.15	15	Number.	NUMBER.	Number.
11.15 to 11.30	15	Form.	Form.	NUMBER.
11.30 to 11.40	10	MUSIC.		
11.40 to 12.00	20	LANGUAGE.		
		DISMISSAL.		
1.30 to 1.35	5	SINGING.		
1.35 to 1.45	10	READING.	Language.	Language.
1.45 to 1.55	10	Language.	READING.	Spelling.
1.55 to 2.00	5	PHYSICAL EXERCISES.		
2.00 to 2.10	10	Spelling.	Spelling.	READING.
2.10 to 2.30	20	DRAWING OR WRITING.		
2.30 to 2.40	10	*Recess.*		
2.40 to 2.50	10	WORD DRILL (Phonics or Spelling).		
2.50 to 3.00	10	READING.	Word Study.	Word Study.
3.00 to 3.10	10	Word Study.	READING.	" "
3.10 to 3.20	10	" "	Word Study.	READING.
3.20 to 3.30	10	MEMORY GEM, OR R'D'G TO CHILDREN.		

N. B. Small capitals indicate recitation periods; others indicate seat work. The form of this work should be varied.

PROGRAMME FOR SCHOOL OF TWO CLASSES.

Second or Third Grade.

Time of Class.	Length of Period.	Class I.	Class II.
9.00	20	SONGS AND GENERAL LESSON.	
9.20	15	READING OR WORD STUDY.	Study Gen. Lesson.
9.35	15	Study Gen. Lesson.	READING OR WORD STUDY.
9.50	10	PHYSICAL EXERCISES.	
10.00	15	NUMBER.	Number.
10.15	15	Number.	NUMBER.
10.30	15	*Recess.*	
10.45	20	LANGUAGE.	
11.05	15	READING.	Language.
11.20	15	Language.	READING.
11.35	25	WRITING OR DRAWING.	
1.30	15	MUSIC.	
1.45	15	LANGUAGE.	
2.00	5	PHYSICAL EXERCISES.	
2.05	15	READING.	Lang. or Spelling.
2.20	15	Lang. or Spelling.	READING.
2.35	10	*Recess.*	
2.45	15	GEOGRAPHY.	
3.00	15	SPELLING.	
3.15	15	WRITING OR DRAWING.	

V. THE LESSON.

The effectual teaching exercise is the one for which the teacher is thoroughly prepared. The definiteness of her preparation depends upon her knowledge of the subject, and upon her conception of the ideal teaching exercise. Our purpose in these few pages is to present some of the characteristics of the good teaching exercise.

The results to be obtained through the lessons are three: knowledge-getting, power-getting, and the test of knowledge and power. According to the result to be obtained, then, we have the three classes of teaching exercises, — the lesson whose object is to impart new knowledge, the lesson whose object is to afford practice in using this knowledge, thus gaining new power, and the lesson whose object is to test or measure the pupil's knowledge or power.

How can *new* knowledge be presented to the child? Only through the appropriate illustration of the truth to be taught or the objects to be known. If the idea is entirely new to the child, it must enter through the appropriate sense. He must taste the lump of sugar to know that it is sweet, see it to know it is white, handle and see it to know its form and hardness. He must hear the bird sing to know its note, must smell of the flower to know its fragrance. Only from the object, appealing to his senses, can the child get new ideas of qualities and relations. And only from repeated concrete illustrations of a general truth can he come to the apprehension of the truth as universal. He is told that 6 blocks and 2 blocks are 8 blocks, that 6 boys and 2 boys are 8 boys, and so on, until he begins

to realize that 6 and 2 are 8. He finds 4 angles in this square, and in this, and this, until unconsciously he pictures the 4 angles as belonging to every square. He learns that a fraction is one of the equal parts into which anything is divided, by dividing into equal parts and naming the parts. The first essential to good instruction is right illustration of the point to be taught.

To secure such illustration, the teacher must have definitely in mind what she wishes to teach. For example, the child is to be taught what is meant by one half of anything. He has already an indefinite idea, and uses the term. But he is to be led to the exact use of the term. The teacher decides that the definition to be presented is this: "One half is one of the two equal parts into which anything is divided." What illustration is demanded? Something which can be divided into two equal parts. An apple? No, for the child should prove the equality, and he can apply no test to the apple. Strings, strips of paper, squares, circles, — or better, all of these, — should be used. Lack of definiteness in the teacher's thought will lead to lack of definiteness in the illustration.

The points to be illustrated should be presented in definite order. In this lesson the points are these: —

1. A something is divided.
2. It is divided into two parts.
3. These parts are equal.
4. The name of one such part is one-half.

Order in the presentation of the steps will secure orderly thought and complete expression. Such exercises, continued long enough, will develop the habit of systematic thought and expression.

The questions should be definite, inducing and directing thought, — not, "What about the parts of the circle?" but, "How do the parts compare in size?" They should not contain the answer, as, "The parts are equal, are n't they?" This leaves no room for the child's thinking; he simply echoes the teacher's words. They should be well, stated, — not, "Sposen I cut this square in two," but, "Watch! what did I do?" "You cut the square in two." "Into how many parts did I cut it?" "You cut it into two parts." "How do these parts compare in size?" "They are equal."

After the teacher's questions have led the children to interpret the illustration, they should tell what they have learned, that she may be assured that they have seen truly. "We divided the string into two equal parts; each part was one half of the string." "We cut the square into two equal parts; each part was one half of the square." The value of the different illustrations is shown here. From the many presented the child is led to the general statement, "When *anything* is divided into two equal parts, one of the parts is one half." Or, "One half of anything is one of the two equal parts of the thing."

The third step is to lead the child to apply his knowledge. "Find me one half of the square. Pour me a half of a quart of water. Show me one half of a circle. Fold this paper in halves." See, tell, apply; this is the order of illustration.

Following the first exercise for the presentation of new knowledge, should come the opportunity for practice, — the drill, or the recitation. The new knowledge is to be fixed in the child's mind; he is to become

skilled in using it. His practice is to develop habits of right seeing, thinking, telling. Therefore the teacher assigns seat work which demands use of the knowledge just presented. In the case above illustrated, after the child becomes skilful in drawing, cutting, and measuring and estimating halves of single things, he is set to finding halves of groups of objects. The work set for the child should *always demand thought*, and some measure of exertion of his powers. Otherwise it is not helpful; it keeps him still, not busy. Let every exercise be a little harder than the last achievement; then the child will grow.

In the pages given to the discussion of seat work we have noted the essentials, and so may pass them now to consider the oral recitation. This is intended simply to afford additional drill, or as a test.

If the object is drill, the teacher should assure herself that the exercise affords *needed* drill. The statement seems absurdly simple, but this axiom is not consciously heeded in all schoolrooms. We will suppose that the teacher is questioning a second-grade class on the facts in the numbers to twenty. John does not know that 8 and 7 are 15. "Next," is the teacher's word. "Next" does not know more than John, and the question trails down the class till Mary answers it. "8 and 8 are how many?" the teacher continues. Now, every failure on the 8 and 7 was a flag waved in her face, warning her that here was the *need* of drill. But she did not heed it, and the children went to their seats no wiser than before.

Quite as significant as the failures are the correct replies. Little drill is needed along lines where the children meet with no difficulty. Such repetition is useless.

Questions should be introduced often enough to provide a review, to prevent forgetting, but the major part of the recitation should be given to the weak places.

A good recitation relates the old to the new, instead of treating the lesson as an isolated whole. The lesson on rivers should be introduced by a review of brooks, the lesson on the square calls for the review of straight lines and right angles. All the new thoughts should be connected with what has preceded, in logical lines. "Yesterday we learned what are the directions of the prevailing winds over the Atlantic Ocean; to-day we will study to see the effects of these winds;" or "Yesterday we studied the life in the hot zone; to-day we will compare with that the life in the cold zone." The review should enable the child to see the subject as a whole, knowing each part in relation to the whole. If the teacher recognizes this relation her teaching will be direct, organized, simple, for she will recognize the few main topics about which all knowledge is centred, and will lead the child to arrange the knowledge which he gains in the same way. Such grouping prevents the confusion and weakness of incoherent memorizing, the gathering of facts and stowing them away without regard to use or relation.

Further, in a good recitation *all* members of the class recite; all the time of the recitation is of value to every pupil. This is brought about in the first place by the attention of all pupils to the work in hand. If every child is held responsible for knowing all that is said in the class by teacher and pupils, he gets the full benefit of the entire lesson. He may not answer every question, but he thinks the answer. The power to hold the attention of the class means the power to teach. It

[illegible] all the children to learn. This power may be [illegible] where it is weak by careful study of the [illegible] that the teacher is brimful of what she [illegible] the child to know, and imparts her own interest [illegible] and by careful preparation of every lesson, so [illegible] from all bondage to books; and by care [illegible] The questions should be distributed, [illegible] to the pupils in the front seats or to those [illegible] The dull pupils and the bright [illegible] each receiving what he most [illegible] pupil should be questioned often [illegible] responsible for hearing and discussing his [illegible] Until the teacher knows the names [illegible] pupils and even later with older classes, it is [illegible] bearing the names of the pupils. These [illegible] after every recitation. Their use will [illegible] of every member of the class, and [illegible] the pupils from counting upon their "turn."

In every case the questions should be placed before the name of the child; otherwise all but the elect may [illegible] absolved from listening.

The thoughtful teacher will guard against too close adherence to question-and-answer recitations. Such lessons, however logical and complete, may leave the [illegible] without a [illegible] grasp of the subject as a [illegible] He may [illegible] and no other. Recitation [illegible] topics lead [illegible] tement [illegible] more compre- [illegible] views of [illegible] Suc[illegible] lead to [illegible] bit of co[illegible] logical [illegible] and the [illegible] to think [illegible] ct [illegible] lf-confi- [illegible], a requ[illegible] work [illegible] he child [illegible] can star[illegible] all he has [illegible] ed ab[illegible] wledge in a

form and in a place where he can use it to good advantage later.

The tests should be conducted differently from the ordinary recitation. In the test the teacher's object is to discover what the child knows and what he does not know. She will not wait to teach or suggest, in case of failure. She will either drop the question or pass it on. The result of the test is not only a measure of the child's knowledge, but a guide to her future teaching. It shows needed lines of work.

The exercise should test some definite line of work. If there is opportunity for twenty kinds of mistakes it will prove less helpful than if it discloses one or two faults. The pupils will set to work correcting the few; he will be discouraged by the correction.

The real value of the test to the child lies in his correction of his errors. It was Josh Billings who said, "Success depends, not on never making a mistake, but on never making the same one twice." The child should know what the test teaches, and should set bravely to work to overcome the difficulties which it suggests. He will not be helped by copying his teacher's corrections; he must learn *not* to make the mistake, *how* not, and *why* not.

The test should be not only a test of memory, but a test of power to work along new lines, related to the old. If the child can add 2 to 2, see if he can add it to 32. If he can add one fraction to another, see if he can subtract. If he has studied the Mississippi basin with you, see if he can study the Nile by himself. ach forward, and teach the children to do the same. quire and expect hard work, yet work that can be ne. Develop the habit of honest, faithful, and

diligent attention to the duty of the hour in all recitations.

The lessons have been well taught if the child knows what he has learned, or knows how to find out if he has forgotten. If he has developed a love for study and a desire to learn, if he has become diligent in business and has grown in power, the teacher may know that her work has been well done.

VI. THE DISCIPLINE OF THE SCHOOL-ROOM.

The young teacher usually finds, or thinks that she finds, the greatest difficulty in the discipline of the schoolroom. She may be mistaken in measuring the difficulties. Lack of ability to teach well is not so apparent to her inexperience as is the evident disorder of her pupils. And it is true that no good teaching can be done in the school which is badly disciplined. It may be well, therefore, to consider the purpose and the means of school government before attempting to discuss methods of teaching.

There are two immediate and important ends in view in the discipline of the school. There must be enough quiet and system to enable the daily work of the school to move on easily and without friction or interruption; hence certain rules and routines are agreed upon which will facilitate the doing of this work. But while this end is important, the second is far more so. Through compliance with these rules and habitual obedience to the teacher's direction, as well as habitual regard for the rights and privileges of others, the child grows to a power of self-control and an ability to work in harmony

with his fellows. In too many schoolrooms is this greater aim overlooked, and the discipline is made a matter of the present moment, having to do with the schoolroom tasks alone. But the manner in which the child works at his task, or yields to authority, and the spirit in which he learns to restrain his impulses and to guide his wayward thoughts have to do with the growth of his character. The effect of the schoolroom discipline is lasting. It tells for good or evil upon the future life of the child. It helps him to become a thoughtful, helpful, law-abiding citizen, or leaves him a weakling where he should be a man. It results in habits of clear thinking, power of attention and capacity for work, or in dull indifference. Every schoolroom exercise helps toward some one of these ends. The means of discipline, its spirit and purpose, ought then to be carefully considered by every teacher.

Good discipline is reasonable, not arbitrary. As far as possible, the child should understand the reason for the teacher's requirements. Whispering is forbidden, not because it is wrong in itself, but because it draws the attention of the whisperer and his mate away from the work they should be doing. Snow-balling is good in its place but it cannot be allowed when the small boys and girls are disturbed or hurt in the game. It is the duty of the older ones to defend and protect the younger children; for their sakes they should gladly abstain from their favorite game until there is no danger to the younger children. It is not wrong to ask a question, but it is unwise to interrupt a class recitation in order to do so. The pupils who are reciting are thus defrauded of a part of their time. Even the youngest children will readily recognize the need of

restraining their impulses to speak or move or play, when the gratification of their desires would interfere with the work or the enjoyment of others; and through such teaching and training they come to the attitude which all citizens of the republic should learn. They know the meaning of liberty under law.

There is a wide difference between the spirit in such training and that which allows each child license to do as he pleases, without regard to the good of his neighbor. In such a school freedom does not exist; rather lawlessness reigns supreme. The teacher fails even to accomplish her immediate purpose of allowing the children to please themselves. What pleases one very soon interferes with what pleases another, and the result is disturbance. But under the principle which we have suggested, the purpose of all the children is to help one another, and the individual rights cease when they interfere with the general good. Here is truest liberty; and such harmonious working together is the result of right discipline. This reasonableness does not imply that there shall be no implicit obedience without question; rather, it tends toward that obedience. A child who recognizes the justice of a teacher's requirements in general, will be ready to go on in particular cases without explanation, because his teacher thinks it best. And there must be times in his experience both as boy and man, when he yields to the law without knowing the reason why, but cheerfully nevertheless, because he believes in his leader. Such obedience to law can never be taught by arbitrary authority. The discipline of the court-martial has no place in the schoolroom, nor does it result in habitual and thoughtful obedience.

The motive is the important factor in school discipline. Pupils readily recognize the teacher's motive; they are keen observers of human nature; they know when a command is given because the teacher is fretful, impatient, or angry, and when it is the outcome of a deliberate intent and constant desire to help the child, or to benefit the school. Children will endure any punishment which their sense of justice shows them is deserved; they will demand fair play for themselves and for others. The teacher who inspires her pupils with confidence in her motive will have little trouble in controlling them.

The children should not only recognize the teacher's general purpose in her discipline, but they should consciously obey the highest motive in their own action. This does not mean, necessarily, the highest motive which the teacher can comprehend, but the highest which the children can appreciate. They should refrain from whispering, not because they fear reproof or punishment, but because they are willing to deny themselves for the good of others; because they desire the teacher's approval and that of their own conscience; because they would win the power of self-control. It may be necessary in the earlier stages, to appeal to fear of punishment or love of praise, but this should give way to the desire of approval of conscience and the love of right-doing.

The wise teacher leaves to her pupils, as far as possible the power of choice; she leads them to see the result of one course of action and of its opposite, and then leaves them to choose. Thus she cultivates their judgment and leads them to independent right doing. The question of snow-balling is to be decided; instead of stating her decision, announcing a rule, and the pen-

alty attached to its infringement, she presents the case to the pupils and leaves them to decide for themselves. "If you throw snowballs when you choose, accidents will happen, as we have already learned in our experience. Little ones will be hurt; how can we help it?" "They can keep out of the way." "But have they not the same right to the playground that the older ones have?" "They can stay on their side." "Are the school grounds large enough to make that entirely safe?" "No." "What then?" "We shall have to give it up except when they are safely out of the way." "What shall be our rule, then?" The pupils will yield ready obedience to rules which they have framed for themselves and whose justice they recognize. They will decide with equal justice what penalty should be attached to breaking a rule; and this power to reason and to act upon principle, is worth far more than the simple habit of doing without reasoning, — though "The Charge of the Light Brigade" might imply the opposite.

Habits of action are formed through repetition. Every act leaves in the mind a tendency to repeat that action and added power to act in that direction. So every right choice helps to develop the habit of right choosing; every act of obedience tends to strengthen the habit of obedience; every exercise of self-control results in greater power of self-command. The continued repetition of right action makes such action habitual; it becomes second nature to the child. Left to himself at the end of the school life he will tend to continue in the line of such action. The schoolroom habits are an important outcome of the schoolroom discipline.

The habits which the child should gain are too many to enumerate here, but a few of them should stand in

the foreground: the habit of obedience, of which we have spoken, the habit of self-control, the habit of allegiance to principle, the habit of overcoming obstacles, the habit of enduring discomfort cheerfully, the habit of doing for others, the habit of kindly feeling, the habit of courteous expression, the habit of truth-telling, the habit of punctuality and order. The list might be continued indefinitely; each one is indispensable to a well-formed character; each one may be strengthened in the schoolroom.

The discipline which the child gains in his playground experiences is not less valuable than that of the schoolroom. The child comes from home, where he is the centre of admiring relatives, to the schoolroom where he is one among many, having equal privileges with all, but no more. He competes with his mates in the various games and is measured by his actual success. He is knocked down by accident and is expected to get up, brush the dust from his clothes, and join in the game again without a murmur. If he withdraws to a corner to nurse his bruises, he is soon left alone with them, though not until he has heard expressions of boyish sympathy and condolence. If he goes weeping to the teacher, she says, if she is wise, "I am sorry you are hurt. Some cold water will help it. But brave boys bear hurts like men; they do not cry." Through such experiences the boy grows strong to endure hardship.

Just as surely the thoughtful teacher leads the children to care for one another in real hurts, to guide the little feet, and to keep the lame from stumbling. The association of children, small and great in our ungraded schools should induce chivalric kindliness on the part of the strong, and brave endurance on the part of the

weak. If the teacher is in sympathy with her pupils, and shares their play-ground experiences, her influence will tend to secure these results.

The routine work of the schoolroom should be so arranged as to prevent friction and disorder, thus avoiding the necessity of reproof or punishment, and leaving the time free for study, instruction, and recitation. Lessons should be given in the first days of the term to teach the pupils how to move together, to come and go to and from the recitation, to stand and to work at the board, to go out and come in at recess. This prearranged order of movement will prevent collision and disturbance. In the first exercises, when the pupils are practising these movements, the directions should be definitely and quietly given. After the children have become accustomed to the order of movement, a signal may be substituted for the complete direction. This should be slight and quiet. Noise does not command attention. Let the voice be low, clear and decisive, impelling quiet, thoughtful attention to the exercise.

Such routine saves time and energy on the part of both children and teacher, and gives the schoolroom a quiet and business-like atmosphere. Although the form in itself is of minor importance, it can be so taught and followed as to develop systematic habits of work, and to allow freedom for the study.

All directions, whether by word or signal, should be exactly followed by every pupil. The school should move as a unit. We frequently hear teachers direct as if they did not anticipate obedience. "Books in the desks, children. John, did you hear me? Kate, what did I say? Every child is to place his books in the desk." All these directions are implied in the first. Such reit-

eration of commands makes them meaningless. The child waits for the last chance. The teacher should expect and should obtain absolute compliance with her least request, and this from all the pupils in the room without delay.

Many occasions of disorder in the schoolroom would be prevented by a right apportionment of lessons, adapted to the capacity of the children, and varied from day to day so as to secure interest. The mischief found "for idle hands to do" can be banished by work alone. Careful preparation of the day's lessons beforehand makes the teacher ready with task, material, and directions. Each pupil knows just what to do, when to do it, and how. The need of questions and comment is obviated by the concise directions. Pupils can be trained to distribute pens, pencils, paper, etc., quietly and expeditiously, in some definite order, thus relieving the teacher for more important work, and creating in them the spirit of helpfulness.

The teacher's preparation for the teaching exercise or recitation enables her to present her subject in a manner interesting to the pupils, to illustrate vividly, and to be free from all need of reference to "the book." Thus she can hold the attention of the pupils. They will not be attentive if they are not interested. They will not be interested if the teacher is tied fast to the question and answer of the text-book. And out of the indifference and inattention spring disorder and its attendant trouble. When the children are truly interested in their lessons this avenue of difficulty is closed.

Beyond the careful preparation for her lessons and the details of the schoolroom work, the teacher needs sympathy with child life, and power to put herself into

the child's place. Many an offence against the rules of school is committed thoughtlessly, yet is treated by the teacher as if it were an act deliberately intended. Such an assumption on the part of the teacher leads to wilful disobedience later, for it stirs a sense of injustice which rankles in the child's heart long after the teacher has forgotten the offence. She should learn to judge from the child's standpoint in order to see both sides and to deal justly.

The wise teacher often shuts her eyes to misdemeanors which would be emphasized by open reproof. The attention of the school is attracted by the reprimand to faults which otherwise they would never see. If the teacher is constantly calling for order, the pupils become impressed with the fact that the school is disorderly, and that the teacher cannot help it. A quiet word to the offender, a look or sign, a conversation after school when nobody else knows, are better than the open correction. They do not arouse the spirit of defiance as does the open reproof. The teacher's manner in necessary direction, should assume the intention to obey, not antagonism. Her attitude toward the child does much to determine his own. Anticipating obedience and good-will, she will find them; looking for malice and mutiny, she will doubtless discover them likewise.

Rules of action should be decreed only when occasion demands them. The reason for them will then be apparent, and they will not seem to the pupils arbitrary exercise of authority. Once made, they should be carefully followed. They should not be enforced with severity one day and forgotten the next.

Penalties should be in line with the offence when

possible. The child who cannot play with his mates without quarrelling must take his recess alone. The abuse of a privilege should be followed by its withdrawal. Punishments may and should be slight, but certain. The teacher's even and steady persistence in the course she considers right, counts for more than undue severity.

In regard to the discipline of the child, far more than his instruction, the teacher comes in contact with the parents. She should, from the beginning, consider their rights and privileges as well as her own, and act accordingly. As far as possible, she should acquaint herself with the home life of the children. Such knowledge will enable her to interpret their school life, explaining many habits and tendencies with which she must contend, and giving her the patience which comes of understanding. Such knowledge helps her to interpret the motive of the act, and often restrains the harsh judgment or unmerited reproof. The child who was late because her mother was sick and she was needed to "mind the baby," will not be dealt with in the same manner as the boy who stopped to play marbles.

The child who has inherited a tendency to untruth and trickery will be taught more patiently, rather than judged more harshly, if the teacher appreciates the low ideal which is accepted in his home. Many a child finds in the schoolroom his strongest incentive toward right-doing, and finds in the teacher the highest ideal which his life has yet held. If she knows the spirit which surrounds him at home and the difficulties with which he has to contend, she will find herself doubly armed to help him in his time of need.

Often this knowledge enables her to judge more gently the actions of the parents. Mrs. McCarty desires Katie's overshoes to be kept on during the school hours. They have been left over from last winter and are much too small for the child, so that the process of encasing her feet demands stout wrestling. The arbitrary teacher has been heard to say in such a case, "I don't care what your mother says; I say they must come off in the schoolroom, and when you are in school you will obey me." Poor Katie is plunged in a gulf of dark despair, — her mother's threats on the one side, and her teacher's demands on the other. A little thought on the part of the teacher, a note to the mother, a kind word of explanation to Katie, a promise of help with the refractory shoes, would make the matter right and bring mother and child into surer harmony with the work of the school. Many of the requirements and requests of the parents come from lack of understanding of the conditions of the school, from entire failure to comprehend the results that would come if her request were granted. The mother naturally sees the home side of the case, and so consults her convenience and that of the child. Like the teacher she honestly desires the best good of the child, and a patient explanation of the schoolroom work would ensure her co-operation. It is well for the teacher to assume this from the beginning, — to expect the parents to sympathize with her in her work for their children and to earn their support by her own appreciation of their interest in the children and their desire to do what is right.

Contact with the children in their plays and games will often give the teacher an insight into their lives

which is not so readily gained through the working together in the schoolroom. In the country school the teacher has the best of opportunities of learning to understand the children in the long noon hour when the children who live at a distance must stay at school. This is an hour of perplexity and trouble indeed, but the teacher who wrestles with these in the right spirit will surely obtain the blessing. If the hour is spent apart from her in romping and rough games, the tumult will hardly be quelled by the school bell, and disorder will be rampant in the afternoon as well. Many of the occasions for reprimand and punishment come from the excess of animal spirits developed in the lawlessness of the games at noon. If the teacher can win the older children to co-operate with her in caring for the younger ones at noon and at recess, she may introduce pleasant and profitable games which will be helpful as well as hearty, and her own participation in the plays will give her a hold upon the confidence of the children far greater than that gained through the schoolroom exercises. It costs patience and effort, but it is worth while. Books may be brought from the various homes, and stories read aloud; the girls may be encouraged to bring their sewing or knitting, and while they are making the Christmas or birthday presents for mother or father, the teacher is made to share in their home joys and plans. Occupations and games will be provided for the little ones and the older boys and girls will come to emulate the teacher's spirit in providing for these weaker ones. Then there are walks in the fields and woods to discover the first wild flowers or the latest checker-berries; to find the crow's nest in the dead pine, or to get a glimpse

of the partridge with her brood. The best of teaching can be done in these hours. Or in winter, the teacher may don cloak and hood and mittens and slide down the hill, a favored guest of the boy who owns the "biggest double-runner." At her suggestion lame Jimmy gets a ride too, and little Kate. The little ones are "treated" to long slides down the hill and long rides back. The boy who has been able to show this kindness to the teacher, and for her sake to the little ones, will not fail to behave like a gentleman in the later sessions of the school.

The teacher who can win the children to conscious co-operation with her in the direction of school places these children on the side of good order and removes all tendency to disturb or annoy. So let Johnny clean the blackboards and teach him how to do it quietly and well; let Jack beat the chalk dust from the erasers, and Jimmy sharpen the pencils; let Mary have a special care of the little ones, and let Kate look after their slates; let George go for a pail of water, and let Peter "brush up the entry;" let Kate fill the vase with fresh water, and let Mary water the plants; and let these duties be regularly done and carefully done, with a sense of partnership. Such a participation in the schoolroom duties brings a sense of responsibility for the well-being of the school that goes far toward assuring good order and good work.

HELPFUL BOOKS.

Nature Study:

Colton's Zoology, D. C. Heath & Co.
Guides to Science Teaching, "
Seaside and Wayside, "
(A Series of Readers.)
Mead's Elements of Physics, Silver, Burdett, & Co.
Pillsbury's Elements of Biology, "
Morse's First Lessons in Zoology, American Book Co.
Gray's How Plants Grow, "
Gray's How Plants Behave, "
Youmans' Lessons in Botany, "
Apgar's Trees of Northeastern United States, "
Animal Life in the Sea and on the Land, Harper Bros.
Buckley's Fairy Land of Science, D. Appleton & Co.
Buckley's Life and her Children, "
Burroughs' Birds and Bees, Houghton, Mifflin, & Co.
Thoreau's Walden, "
Torry's Rambler's Lease, "
Kingsley's Madam How and Lady Why, Macmillan & Co.
Jackman's Nature Study, Henry Holt & Co.
Gatty's Parables from Nature, Macmillan & Co.
Newell's Outline Lessons in Botany, Ginn & Co.
Normal Course in Reading, Todd and Powell, Silver, Burdett, & Company.
Alternate Second Reader (Progressive Readings in Nature).
Alternate Third Reader (How to Read with Open Eyes).
Fourth Reader (The Wonderful Things Around Us).
A Primer of Health,
A Healthy Body } Stowell, Silver, Burdett, & Co.
The Essentials of Health,

Geography:

Parker's How to Teach Geography, D. Appleton & Co.
King's Methods and Aids in Geography, Lee & Shepard.
Frye's The Child and Nature, Ginn & Co.
Miss Hall's Our World, "
Miss Andrews' Seven Little Sisters, "
Miss Andrews' Each and All, "

Language and Literature:

Own, if possible, —

Webster's International Dictionary,	G. & C. Merriam Co.
Whitney's Essentials of English,	Ginn & Co.
Poems of —	
Longfellow,	
Whittier,	
Lowell,	
Tennyson,	
Wordsworth.	
Stories from Hawthorne,	Houghton, Mifflin, & Co.
Ten Boys on the Road from Long Ago to Now,	Ginn & Co.
Bulfinch's Mythology,	S. W. Tilton & Co.
Mabie's Stories from Norse Mythology,	Roberts Bros.
Baldwin's Story of Siegfried,	Charles Scribner's Sons.
Lanier's Boys' King Arthur,	"
Kingsley's Greek Heroes,	Macmillan & Co.
Burt's German Iliad,	Maynard, Merrill, & Co.
Burt's Literary Landmarks,	Houghton, Mifflin, & Co.
Open Sesame, Three Volumes of Poems for School use,	Ginn & Co.
Andersen's Fairy Tales,	Houghton, Mifflin, & Co.
Wiltse's Morning Talks,	Ginn & Co.

Read the best books, and become familiar with the best thoughts. In no other way can the teacher inspire the children with a love for the good in literature.

Teaching:

White's Elements of Pedagogy,	American Book Co.
" School Management,	"
Compayré's Lectures on Teaching,	Ginn & Co.
Page's Theory and Practice of Teaching.	Am. Book Co.
Froebel's Education of Man,	D. Appleton & Co.

The list is purposely confined to a few good books. The possession of any one will lead to a desire to own many others.

THE NORMAL COURSE IN READING.

By Supt. W. B. Powell and Emma J. Todd.

The eight books of this course present a unified series, systematically arranged and graded, and include interesting studies in nature, in elementary science, language, geography, history, and general literature.

My teachers join me in the verdict that they are the best readers we have ever used. They interest the children in what is about them. Best of all, they stimulate thought. — *W. H. Hatch, Supt. Public Schs., Moline, Ill.*

THE YOUNG FOLKS' LIBRARY.

Edited by Larkin Dunton, Head-Master of Boston Normal School.

The Young Folks' Library includes "Stories of Child Life," four volumes, and "The World and Its People," five volumes. They make delightful supplementary reading, and may be used to advantage with Language and Geography Lessons.

Our teachers have found "The World and Its People" series an invaluable aid in the study of Geography. — *Principal of Ward School, Cleveland, Ohio.*

My little ones are delighted with "Child Life." It is what I have sought for years. — *Principal of Stivers' School and Kindergarten, Chattanooga, Tenn.*

THE RATIONAL METHOD IN READING.

By Edward G. Ward, Associate Supt. Public Instruction, Brooklyn, N. Y.

This is a combination of the word (or sentence) method and the phonetic method, as set forth in the Manual of Instruction for Teachers, used with the Rational Readers and Phonetic Cards.

The more I study Professor Ward's method, the better I like it. I am satisfied that it is the very best way of teaching reading. All the teachers agree that it is most sensible. — *Miss E. Palmer, New Haven, Conn.*

Send for Circulars of these and other of our Text-Books; also for our Descriptive Catalogue and Introductory Price List, — all mailed free.

SILVER, BURDETT AND COMPANY, Publishers.

Boston. New York. Chicago. Philadelphia.

THE NORMAL COURSE IN NUMBER.

By John W. Cook and Miss N. Cropsey.

The Normal Course in Number consists of "An Elementary Arithmetic," intended for the third, fourth, and fifth grades, and "An Advanced Arithmetic," adapted to the sixth, seventh, and eighth grades, and to ungraded schools.

There is a freshness and a variety about the "Elementary Arithmetic," with an encouraging absence of non-essentials, while the material is sufficiently abundant to give thorough drill and practice. — *Professor Barnes, Leland Stanford Jr. University, Cal.*

The "Advanced Arithmetic" comes the nearest to fully meeting the needs of students of any work with which we are acquainted. — *G. S. Albee, President of State Normal School, Oshkosh, Wis.*

A FIRST BOOK IN ALGEBRA.

By W. C. Boyden, A.M., Sub-Master of the Boston Normal School.

This elementary text-book was specially prepared for pupils in the upper classes of grammar schools. It connects their arithmetical knowledge and practice with algebraic operations by a logical progression of thoroughly graded lessons.

Professor Boyden has performed for us a service we, as teachers, shall appreciate. This book is simple in its language, clear and pointed in its explanations. — *F. A. Morse, Master of Sherwin School, Boston.*

ELEMENTS OF CIVIL GOVERNMENT.

By Wm. A. Mowry, Ph. D.

The fundamental principles of our State and National government explained so as to give students definite knowledge of the duties and privileges of American citizenship. "Special State Editions" prepared and bound separately.

It tells just what the student ought to know, and leaves out all discussion of abstract subjects. I do not see how students can fail to be interested in our government, if such a book is placed in their hands. — *M. T. Pritchard, Master of Comins School, Boston.*

Send for Circulars of these and other of our Text-Books; also for our Descriptive Catalogue and Introductory Price List, — all mailed free.

SILVER, BURDETT AND COMPANY, Publishers.

Boston. New York. Chicago. Philadelphia.

THE HEALTH SERIES OF SCHOOL PHYSIOLOGIES.

By Charles H. Stowell, M.D.

Three books graded from primary classes up to advanced grammar school and high school grades, though each is complete in itself. Each book has been officially endorsed by the Department of Scientific Temperance Instruction of the Women's Christian Temperance Union. All are thoroughly scientific, delightfully written, and illustrated by cuts made from original drawings.

I unhesitatingly say that I know of no work upon the subjects here treated possessing so many good qualities, both in text and illustrations, to commend its use to the public schools. — *A. A. Saunders, M.D., Superintendent of Schools, Charlestown, R. I.*

ELEMENTS OF PHYSICS.

For use in Secondary Schools. By S. P. Meads, Oakland (Cal.) High School.

The object of this text-book is to familarize students with the rudimentary principles and laws that govern matter, so that they may make practical application of their knowledge to things about them. Simple yet instructive experiments are given, and interesting facts are evolved touching objects in familiar use, — as the telephone, electric bells, the telescope, phonograph, etc. The typography of the book is especially fine, and the prominence given to important words helps to fix them in the mind.

AN ELEMENTARY COURSE IN BIOLOGY.

By J. H. Pillsbury, A.M., late Professor of Biology in Smith College.

As a thorough guide to laboratory work and the logical study of living organisms in the plant and animal kingdoms, Professor Pillsbury's method will be found of valuable service to teachers as well as pupils. It is thoroughly up to date, scientific, but not complex, and its style is clear, analytical, and pertinent to the purpose of the book.

Send for Circulars of these and other of our Text-Books; also for our Descriptive Catalogue and Introductory Price List, — all mailed free.

SILVER, BURDETT AND COMPANY, Publishers.

Boston. New York. Chicago. Philadelphia.

THE NORMAL MUSIC COURSE.

A complete series of Music Readers and Charts for every grade of school and class instruction in Vocal Music. By John W. Tufts and H. E. Holt.

The Normal Music Course is the only complete harmonic system of vocal instruction, and offers exceptional advantages over the older and more conventional methods. It is full of the *spirit* of music, and so skillfully planned and executed that a conscientious teacher with very little musical ability can successfully teach it.

We have been using the Normal Music Course for five years. It is very strong pedagogically, and enables the pupil to master musical difficulties; and the constant training points to the truest musical effects. — *Fannie Arnold, Supervisor of Music, Omaha, Neb.*

THE CECILIAN SERIES OF STUDY AND SONG.

A complete Series of School Song-Books adapted to any grade of Schools, to Private Classes, and to Choral Societies. By John W. Tufts.

As a supplement to the Normal Music Course, or an independent Series, the Cecilian Series furnishes a vast number of fresh studies and exercises with part songs adapted for all voices. Teachers, whether using the Normal Music Course or not, find these books indispensable in music work.

OTHER NEW AND PROGRESSIVE TEXT-BOOKS.

The Normal Course in English.
By J. M. GREENWOOD, A.M.

The Normal Course in Spelling.
By LARKIN DUNTON, LL.D., and C. GOODWIN CLARK, A.M.

The Normal Review System of Writing.
By Prof. D. H. FARLEY, and W. B. GUNNISON.
This system is prepared in slanting and vertical copies.

Historical Geography of the United States.
By TOWNSEND MAC COUN, A.M.

Elements of Chemistry.
By S. P. MEADS, author of "Elements of Physics."

Send for Circulars of these and other of our Text-Books; also for our Descriptive Catalogue and Introductory Price List, — all mailed free.

SILVER, BURDETT AND COMPANY, Publishers.

Boston. New York. Chicago. Philadelphia.